The Opportunities and Challenges of Suicide Prevention: A Public Health Perspective

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Prevention Guidelines

#1 The goals of prevention must be based on an analysis of what beneficial outcome is most meaningful to the individual and society.

Prevention Guidelines

#2 The potential benefit of a preventive measure is proportional both to the *prevalence of the disease* and to the *severity of the morbidity* associated with it.

Prevention Guidelines

#3 To be effective in older people, preventive care must take into account the multiple dimensions that impact on their health:

biological

psychological

social

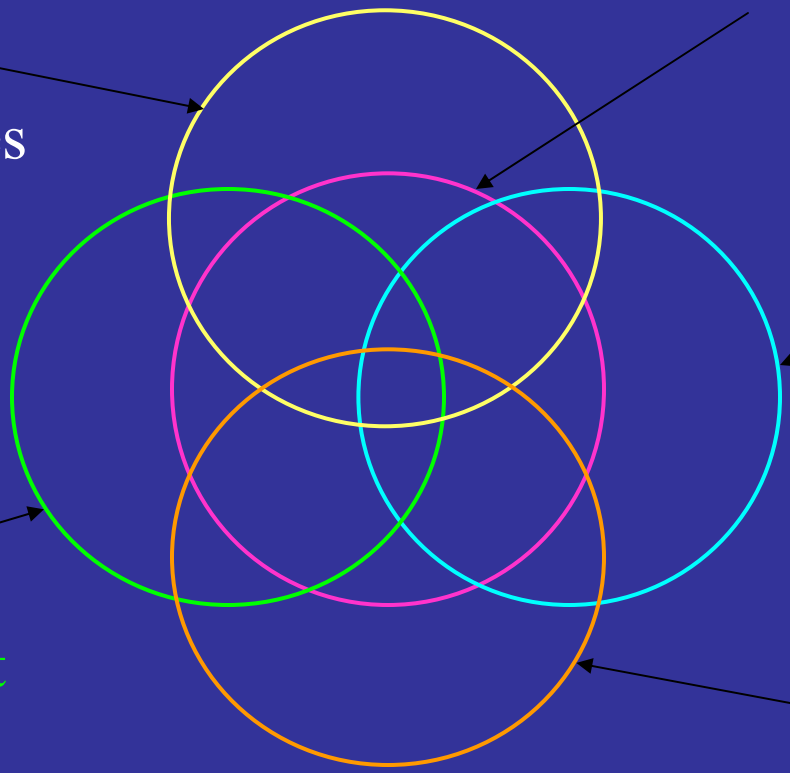
Prevention Guidelines

#4 The effectiveness of a prevention measure depends on:

- *identification* of the risk factors characteristic of the individual or group
- the *strength* of the causal relationship between the risk factor and the disease
- the *alterability* of the causal (risk) factor

SUICIDE RISK FACTORS

Domains of Suicide Risk



Social
- losses
- life changes

Psychological
- personality
- coping

Psychiatric
- depression
- other (e.g., drug abuse, alcohol dependence)

Medical
- illness
- treatment

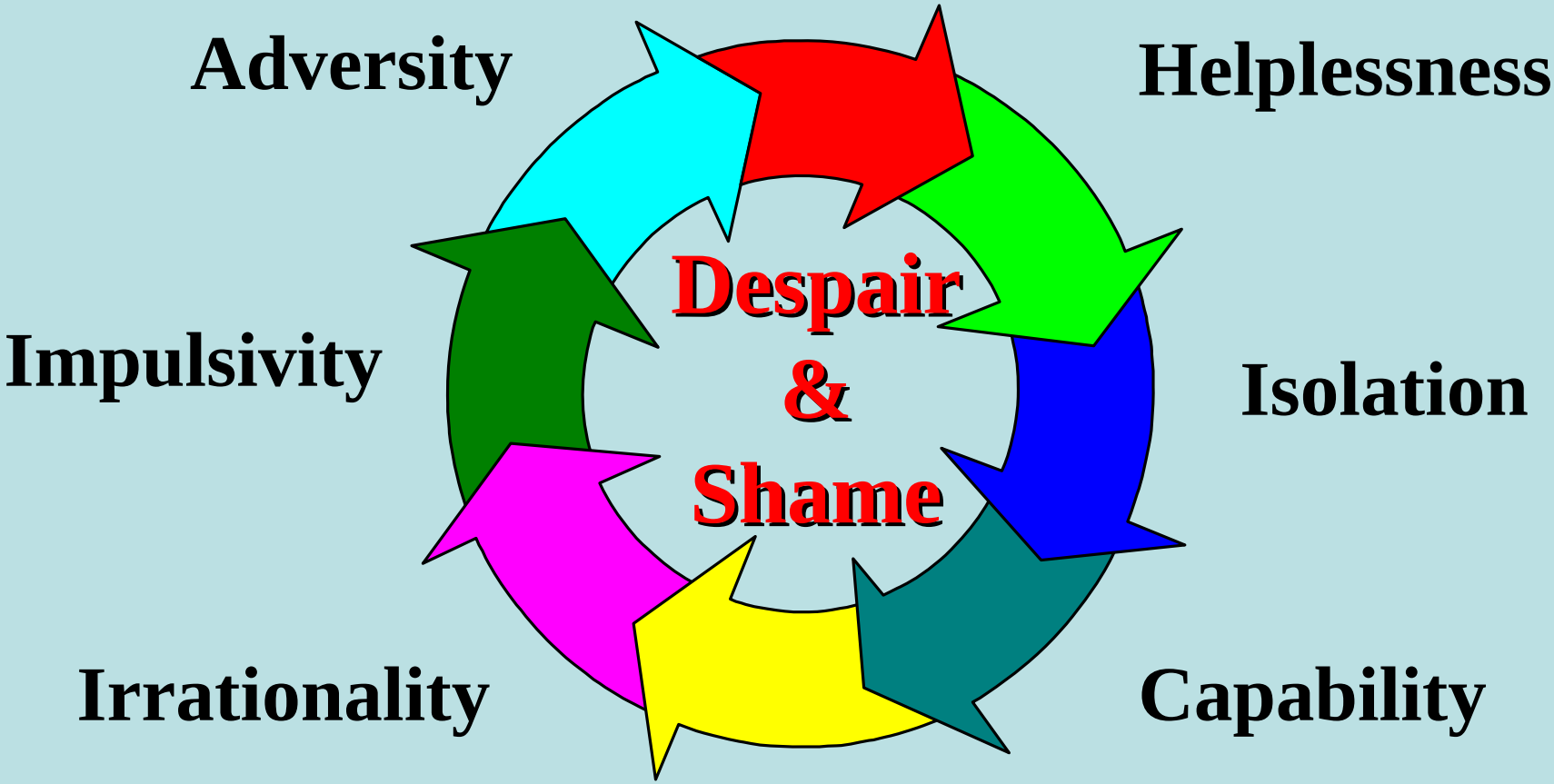
Biological
- aging
- environment

Adapted from Blumenthal SJ, Kupfer DJ. *Ann NY Acad Sci* 487:327-340, 1986

Empirically-Based Risk Factors

- Previous history of psychiatric diagnoses
- Family history of suicide
- History of abuse (including physical, sexual, and emotional)
- Previous suicide attempts, esp. if multiple
- Current ideation, intent, plan, access to means
- Recent discharge from an inpatient unit
- Same-sex sexual orientation
- Impulsivity and Self-Control
- Hopelessness – presence, duration, severity
- Recent losses – physical, financial, personal
- Co-morbid health problems
- Age, gender, race

Final Common Pathway



SUICIDE IS A BEHAVIOR .....

and all behavior is multi-determined

Suicide Risk

varies over time throughout the life of the individual

SUICIDE PROTECTIVE FACTORS

"…focusing on protective factors such as emotional well-being and connectedness with family and friends was as effective or more effective than trying to reduce risk factors in the prevention of suicide."

Borowsky IW, et al. Suicide attempts among American Indian and Alaska Native youth risk and protective factors.
Archives of Pediatrics and Adolescent Medicine, 1999, 153: 543-547.

Protective Factors

- Effective Clinical Care
- Easy Access to Care
- Insurance Parity
- Restricted Access to Highly Lethal Means
- Strong Connections to Family & Community Supports
- Ongoing Medical & Mental Health Care Support
- Skills in Problem Solving, Conflict Resolution, and Non-Violent Handling of Disputes
- Cultural & Religious Beliefs that Discourage Suicide and Support Self-Preservation
- Spirituality and Hope

INTEGRATING RISK FACTORS, PROTECTIVE FACTORS, AND SETTINGS

"Addressing risk factors across the various levels of the ecological model may contribute to decreases in more than one type of violence."

Violence – A global public health problem, **World Health Organization, 2002, p. 15.**

Individual Factors

Risk

- Mental illness – depression, anxiety, bipolar disorder, schizophrenia, etc.
- Substance abuse
- Personality traits – impulsivity
- Personality Disorders - borderline
- Losses
- Age/Sex
- Previous suicide attempt
- Access to means (e.g., firearms)
- Failures
- academic problems

Protective

- Coping/problem solving skills
- Support through ongoing health and mental health care relationships
- Resiliency, self esteem, direction, mission, determination, perseverance, optimism, empathy
- Intellectual competence (youth)
- Cultural and religious beliefs that discourage suicide and support self-preservation
- Reasons for living

Peer/Family Factors

Risk

- History of interpersonal violence/conflict/ abuse/bullying
- Exposure to suicide
- No-longer married
- Barriers to health care/mental health care
- Access to means (e.g., firearms)

Protective

- Family cohesion (youth)
- Sense of social support
- Interconnectedness
- Married/parent
- Access to comprehensive health care

Community Factors

Risk

- Isolation/social withdrawal
- Barriers to health care and mental health care
- Stigma
- Exposure to suicide
- Unemployment

Protective

- Access to healthcare and mental health care
- Social support, close relationships, caring adults, participation and bond with school
- Respect for help-seeking behavior
- Skills to recognize and respond to signs of risk

Societal Factors

Risk

- Western
- Rural/Remote
- Cultural values and attitudes
- Stigma
- Media influence
- Alcohol misuse and abuse
- Social disintegration
- Economic instability
- Incarceration

Protective

- Urban/Suburban
- Access to health care & mental health care
- Cultural values affirming life
- Media influence

SUICIDAL BEHAVIORS OFTEN EMERGE DURING AN ACUTE CRISIS

What is a Crisis?

- A crisis occurs when unusual stress, brought on by unexpected and disruptive events, render an individual physically and emotionally disabled – because their usual coping mechanisms prove ineffective

- A crisis overrides an individual's normal psychological and biological coping mechanisms – moving the individual towards maladaptive behaviors

- Every crisis situation is a high risk situation

THE EVIDENCE THAT SUICIDE is a PUBLIC HEALTH PROBLEM

More Americans Die by Suicide Each Year Than by Homicide

Suicide 31,655

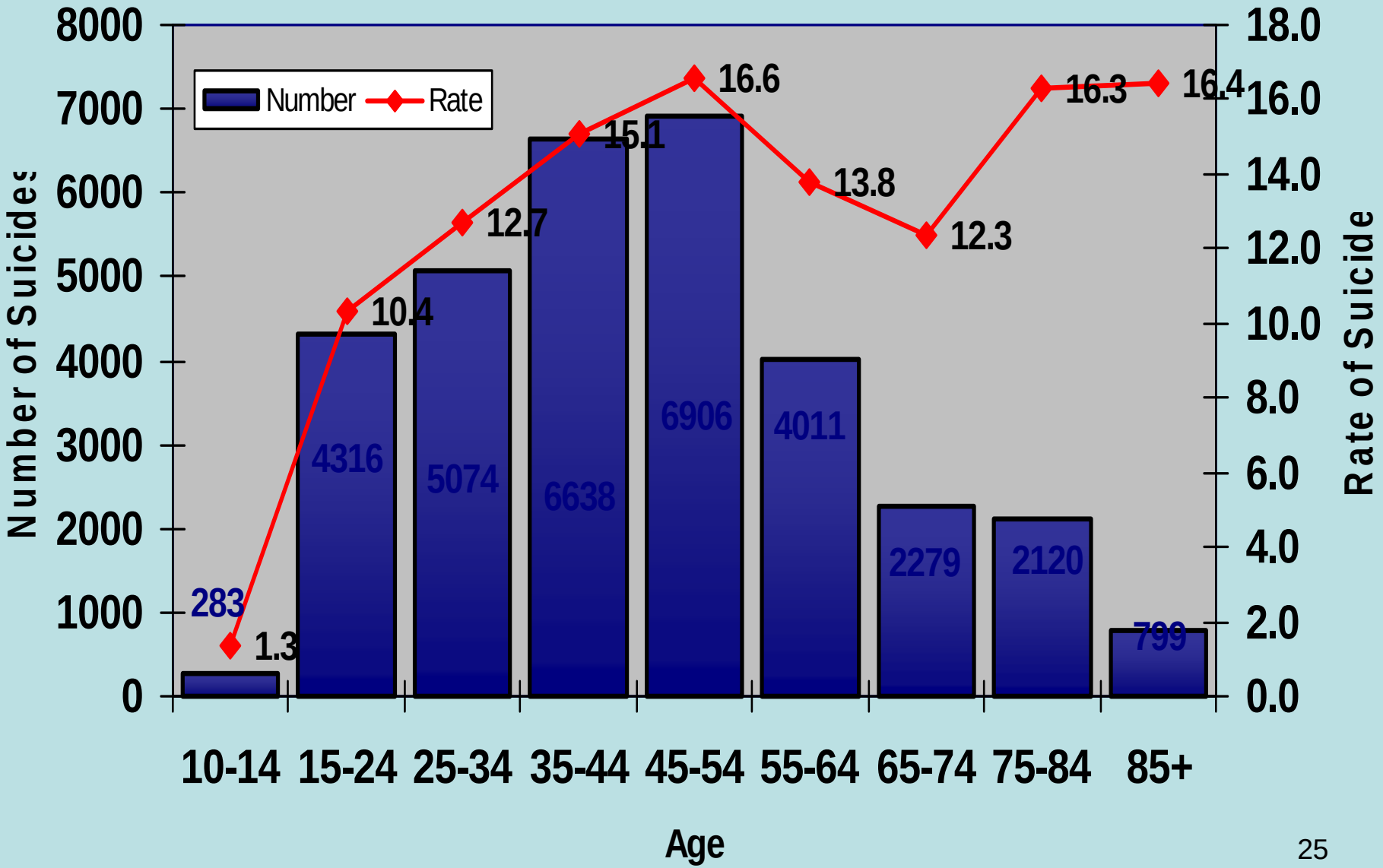
11th ranking cause
11.0 per 100,000

Homicide 17,638

14th ranking cause
6.1 per 100,000

79% more people killed themselves than were murdered by others

Suicides by Age, All Races, Both Sexes, 2004



Workforce Suicides

- Annual cost of workforce-related suicides is approximately $11.8 billion in 1998 dollars.
  - 12,000 employed persons 18-54 died from suicide 2000
  - Suicide is 4th leading cause of death among working persons 18-54
- Deaths among employed persons 18-54 yrs are 2 times more likely to be due to suicide than non-employed (9% vs. 4%)
- Men account for 7 of 8 suicide deaths among workers.
- Blue collar workers account for two-thirds of suicides; white collar workers one-third

Workforce Attempts

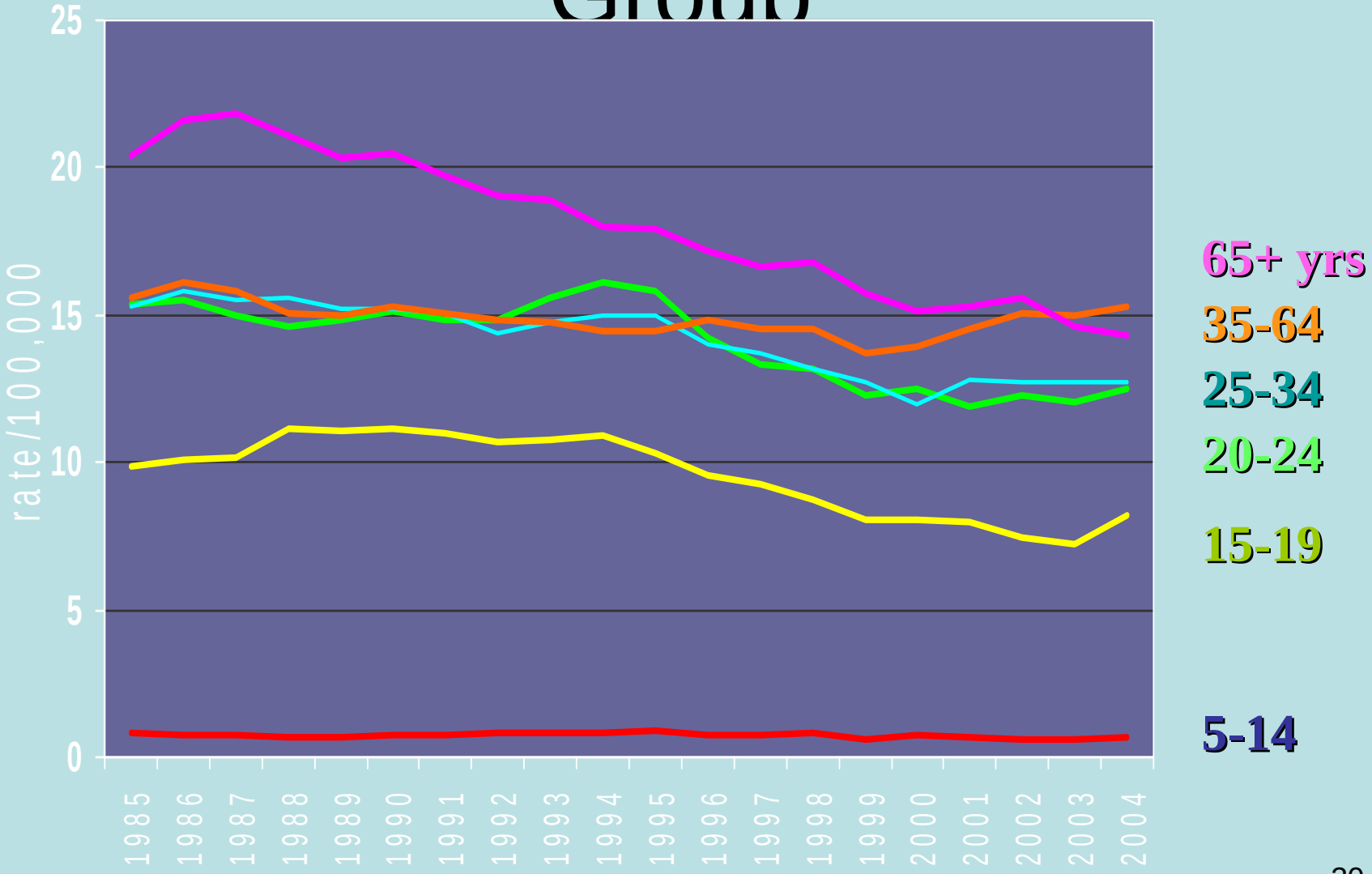
- 500,000 workers attempt suicide annually; 55% women
  - 61% “serious” intent
- 86% of attempters had 1 or more psychiatric disorders
- Long-term costs of treating non-fatal suicide attempts, including lifelong disability, are unknown.

SUICIDE BY AGE and GENDER

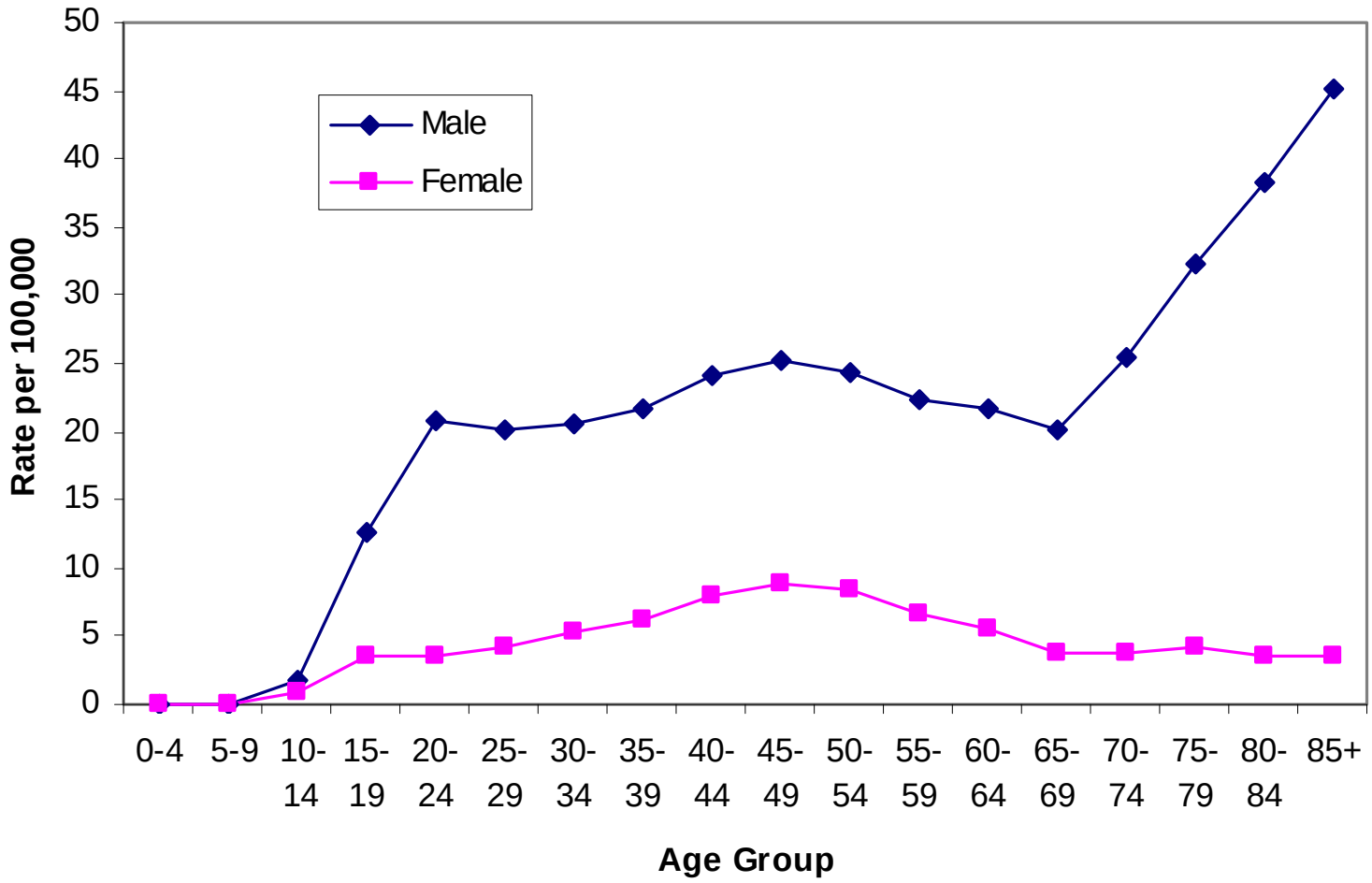
Age Groups

1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65+	All Ages
Unintentional Injury 1,664	Unintentional Injury 1,072	Unintentional Injury 1,343	Unintentional Injury 6,616	Unintentional Injury 9,137	Unintentional Injury 13,997	Unintentional Injury 16,919	Malignant Neoplasms 50,405	Malignant Neoplasms 99,240	Heart Disease 530,926	Heart Disease 652,091
Congenital Anomalies 522	Malignant Neoplasms 485	Malignant Neoplasms 515	Homicide 2,076	Homicide 3,390	Suicide 4,990	Malignant Neoplasms 14,566	Heart Disease 38,103	Heart Disease 65,208	Malignant Neoplasms 388,322	Malignant Neoplasms 559,312
Malignant Neoplasms 377	Congenital Anomalies 196	Suicide 270	Suicide 1,613	Suicide 2,599	Homicide 4,752	Heart Disease 12,688	Unintentional Injury 18,339	Chronic Low. Respiratory Disease 12,747	Cerebro-vascular 123,881	Cerebro-vascular 143,579
Homicide 375	Homicide 121	Homicide 220	Malignant Neoplasms 731	Malignant Neoplasms 986	Malignant Neoplasms 3,601	Suicide 6,550	Liver Disease 7,517	Diabetes Mellitus 11,301	Chronic Low. Respiratory Disease 112,716	Chronic Low. Respiratory Disease 130,933
Heart Disease 151	Heart Disease 106	Congenital Anomalies 200	Heart Disease 389	Heart Disease 730	Heart Disease 3,249	HIV 4,363	Suicide 6,991	Unintentional Injury 10,853	Alzheimer's Disease 70,858	Unintentional Injury 117,809
Influenza Pneumonia 110	Cerebro-vascular 52	Heart Disease 146	Congenital Anomalies 253	Congenital Anomalies 251	HIV 1,318	Homicide 3,109	Cerebro-vascular 6,381	Cerebro-vascular 10,028	Influenza & Pneumonia 55,453	Diabetes Mellitus 75,119
Septicemia 85	Influenza & Pneumonia 51	Chronic Low. Respiratory Disease 55	Cerebro-vascular 76	Complicated Pregnancy 141	Diabetes Mellitus 617	Liver Disease 2,688	Diabetes Mellitus 5,691	Liver Disease 7,126	Diabetes Mellitus 55,222	Alzheimer's Disease 71,599
Cerebro-vascular 62	Chronic Low. Respiratory Disease 49	Influenza & Pneumonia 55	Influenza & Pneumonia 68	Diabetes Mellitus 135	Cerebro-vascular 546	Cerebro-vascular 2,260	HIV 4,516	Suicide 4,210	Unintentional Injury 36,729	Influenza & Pneumonia 63,001
Perinatal Period 58	Benign Neoplasms 40	Septicemia 45	Diabetes Mellitus 67	HIV 131	Congenital Anomalies 436	Diabetes Mellitus 2,045	Chronic Low. Respiratory Disease 3,977	Nephritis 4,141	Nephritis 36,416	Nephritis 43,901
Chronic Low. Respiratory Disease 56	Septicemia 36	Cerebro-vascular 43	Septicemia 61	Cerebro-vascular 120	Influenza & Pneumonia 354	Influenza & Pneumonia 934	Viral Hepatitis 2,314	Septicemia 3,912	Septicemia 26,243	Septicemia 34,136
Benign Neoplasms 52	Perinatal Period 14	Benign Neoplasms 36	Chronic Low. Respiratory Disease 60	Influenza & Pneumonia 104	Complicated Pregnancy 312	Chronic Low. Respiratory Disease 890	Septicemia 2,211	Influenza & Pneumonia 3,422	Hypertension 21,265	Suicide 32,637

U.S. Suicide Rate, by Age Group

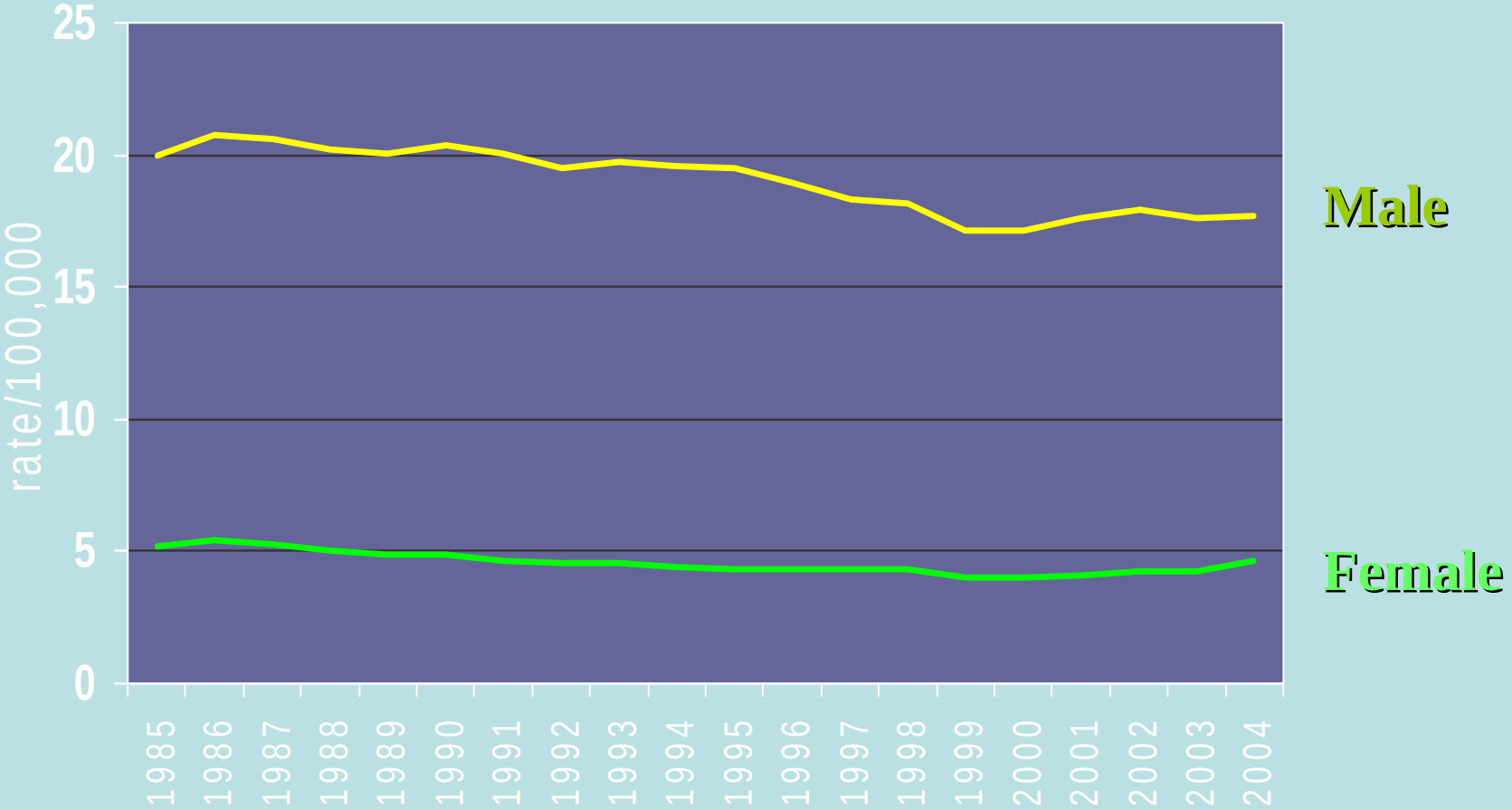


U.S. Suicide Mortality by Age and Gender



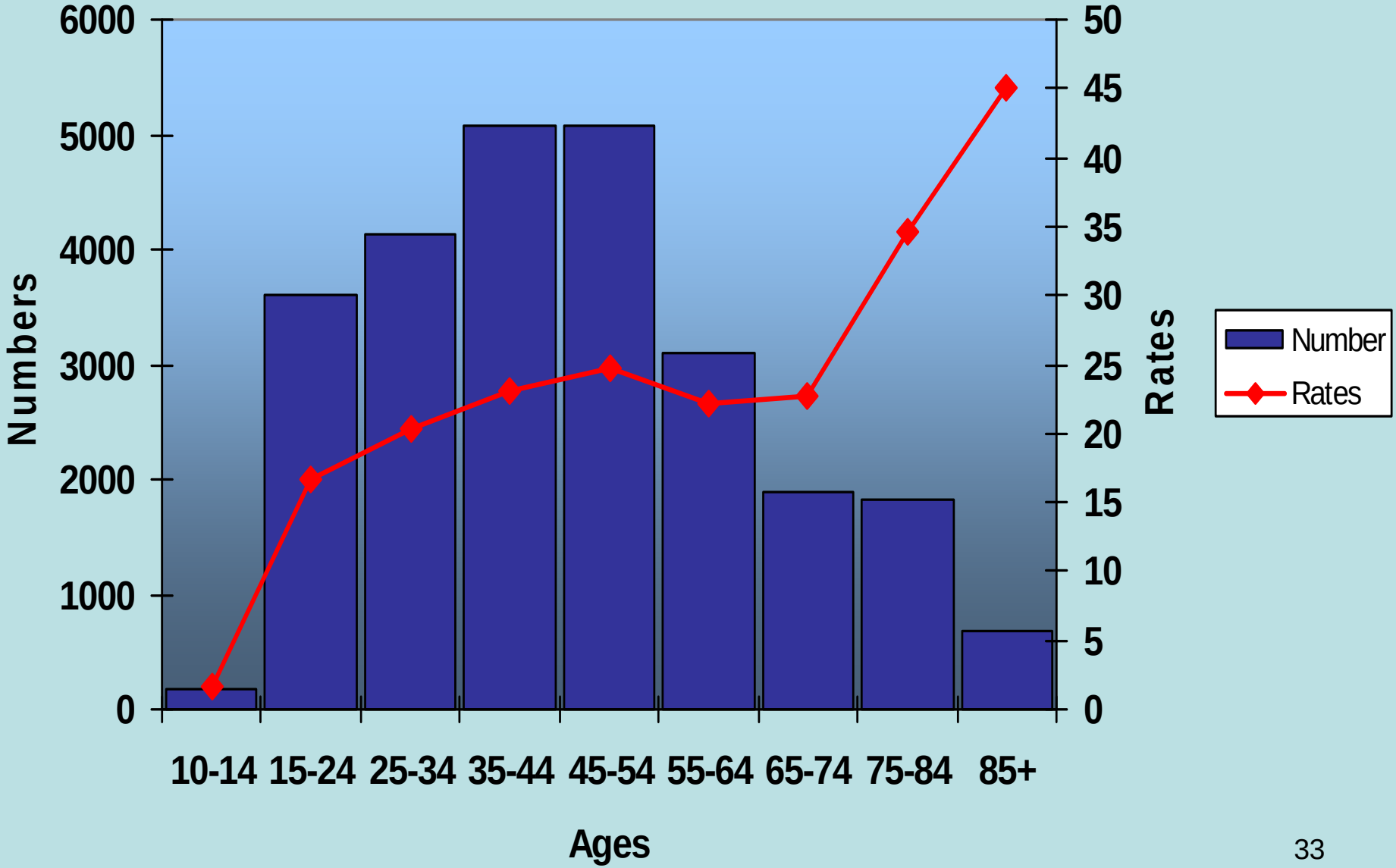
WISQARS, NCIPC, CDC.

US Suicide Rate, by Sex

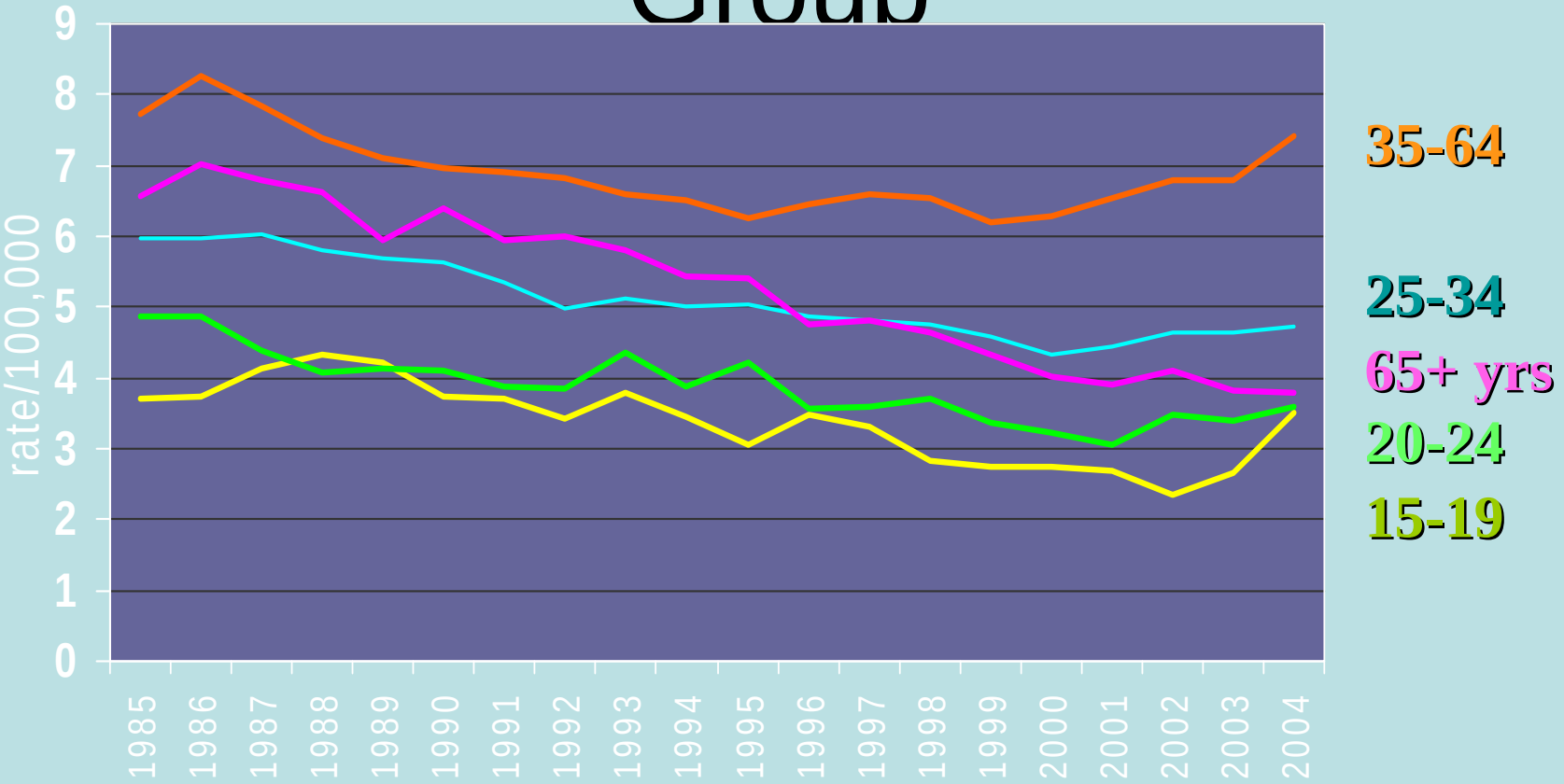


Declines were seen among both males and females until the early 2000s.

Male Suicides by Age, All Races, 2004



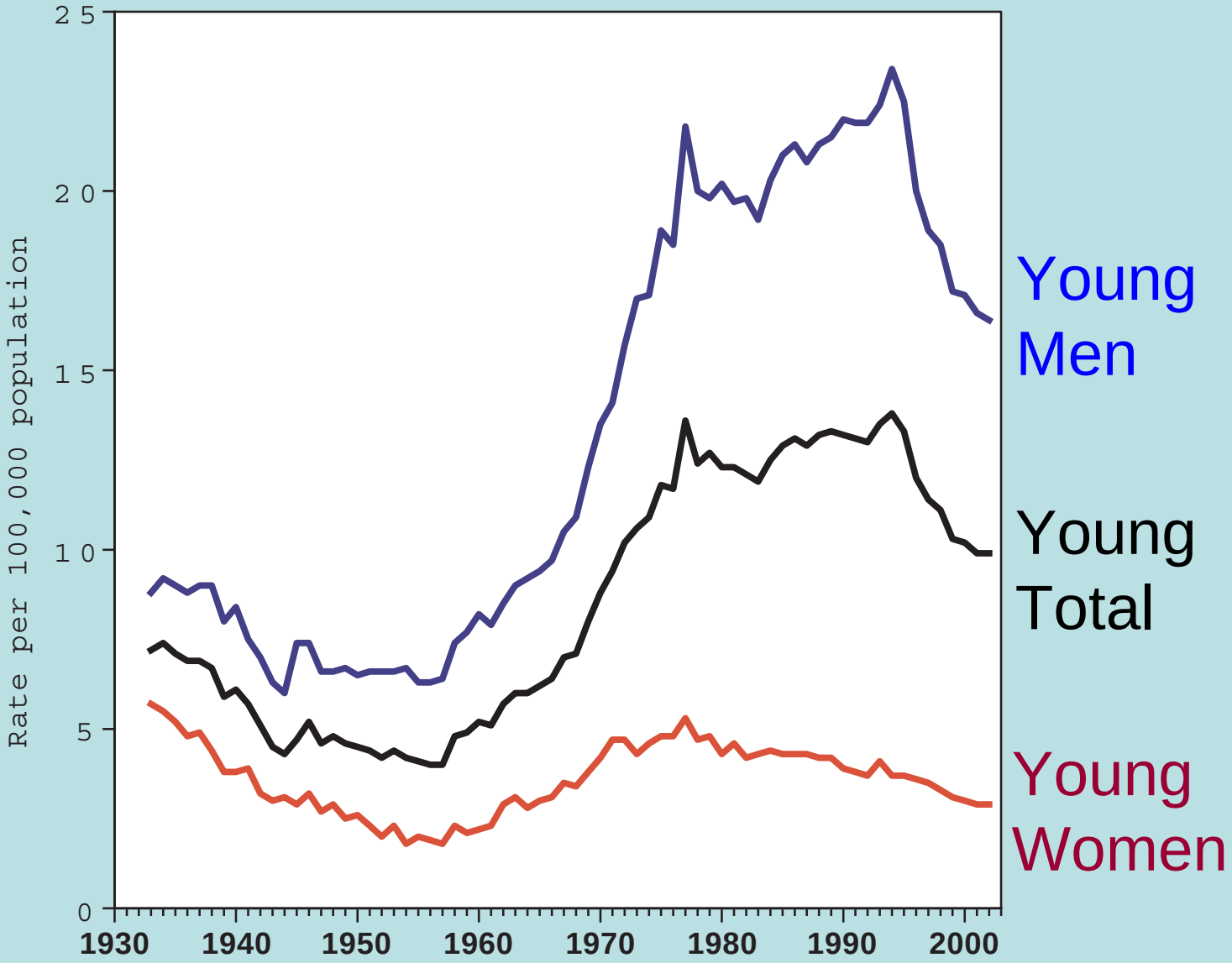
Female Suicide Rate, by Age Group



Elder female suicide rates declined steadily throughout the period; all age groups declined in the 1990s. Middle-aged women's rates have increased since 1999.

YOUTH SUICIDE

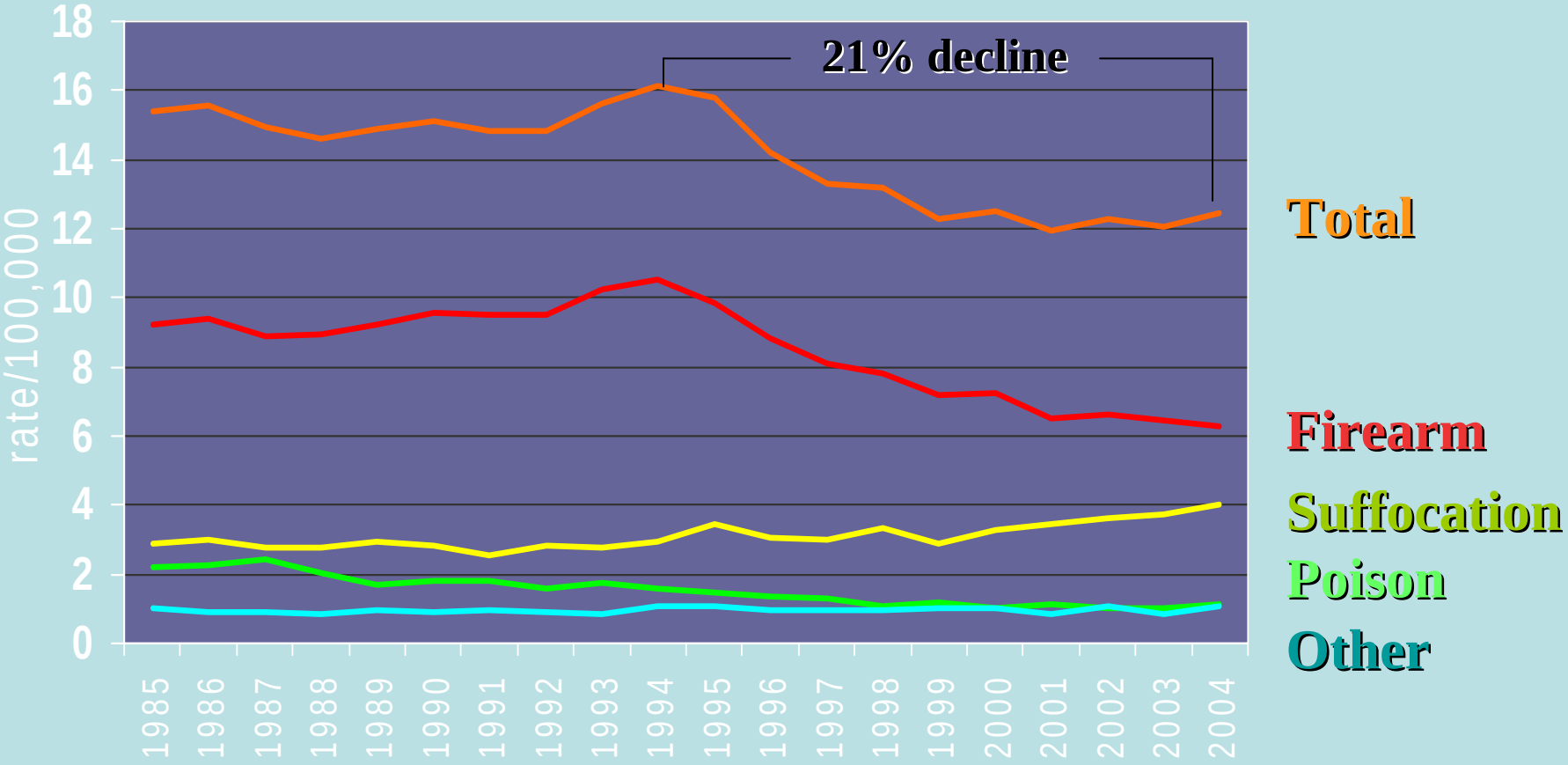
Trends in Youth Suicide by Sex



1933-2002 data

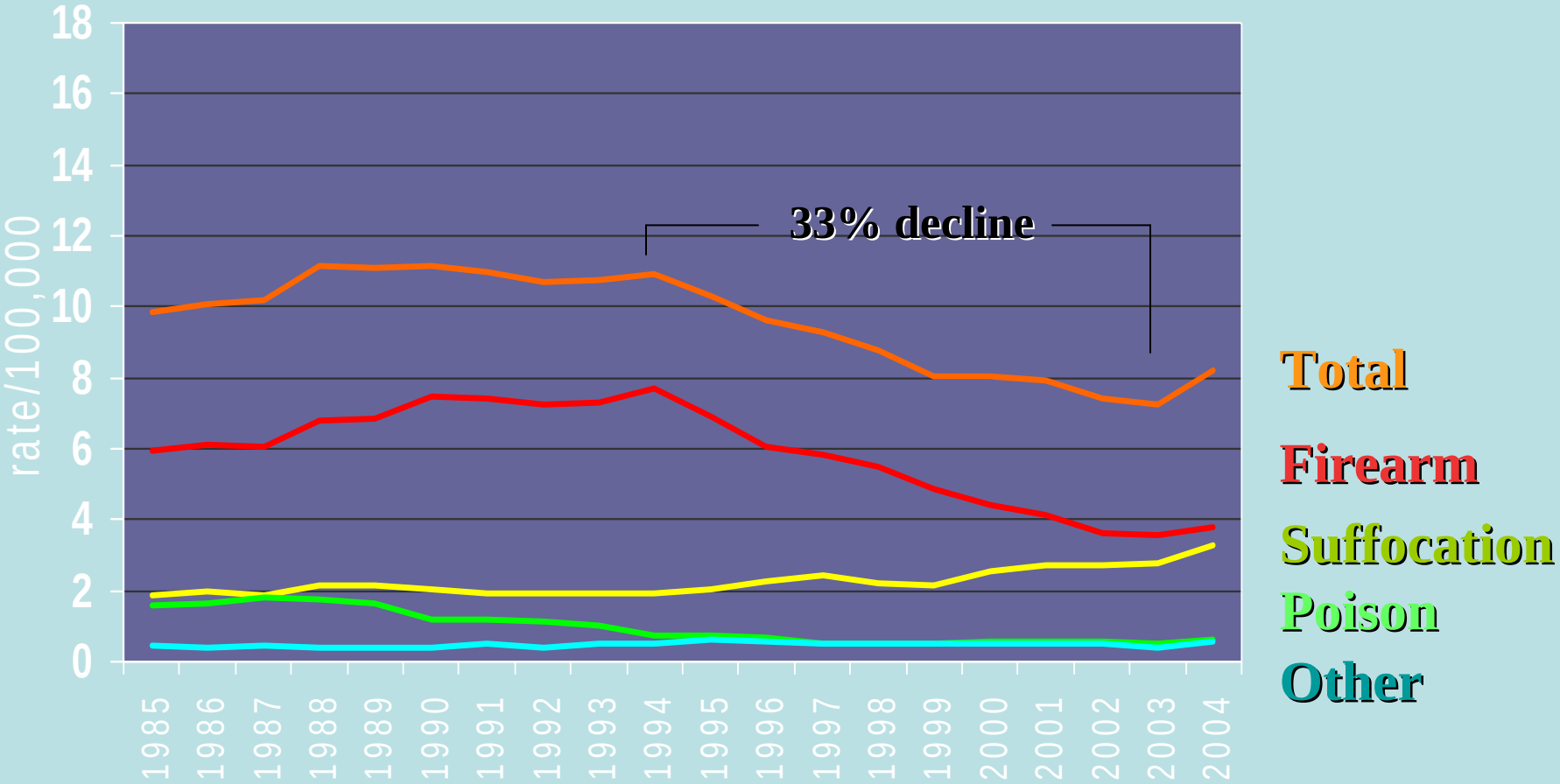
Young = 15-24 years of age

Suicide Rate, 20-24 year-olds



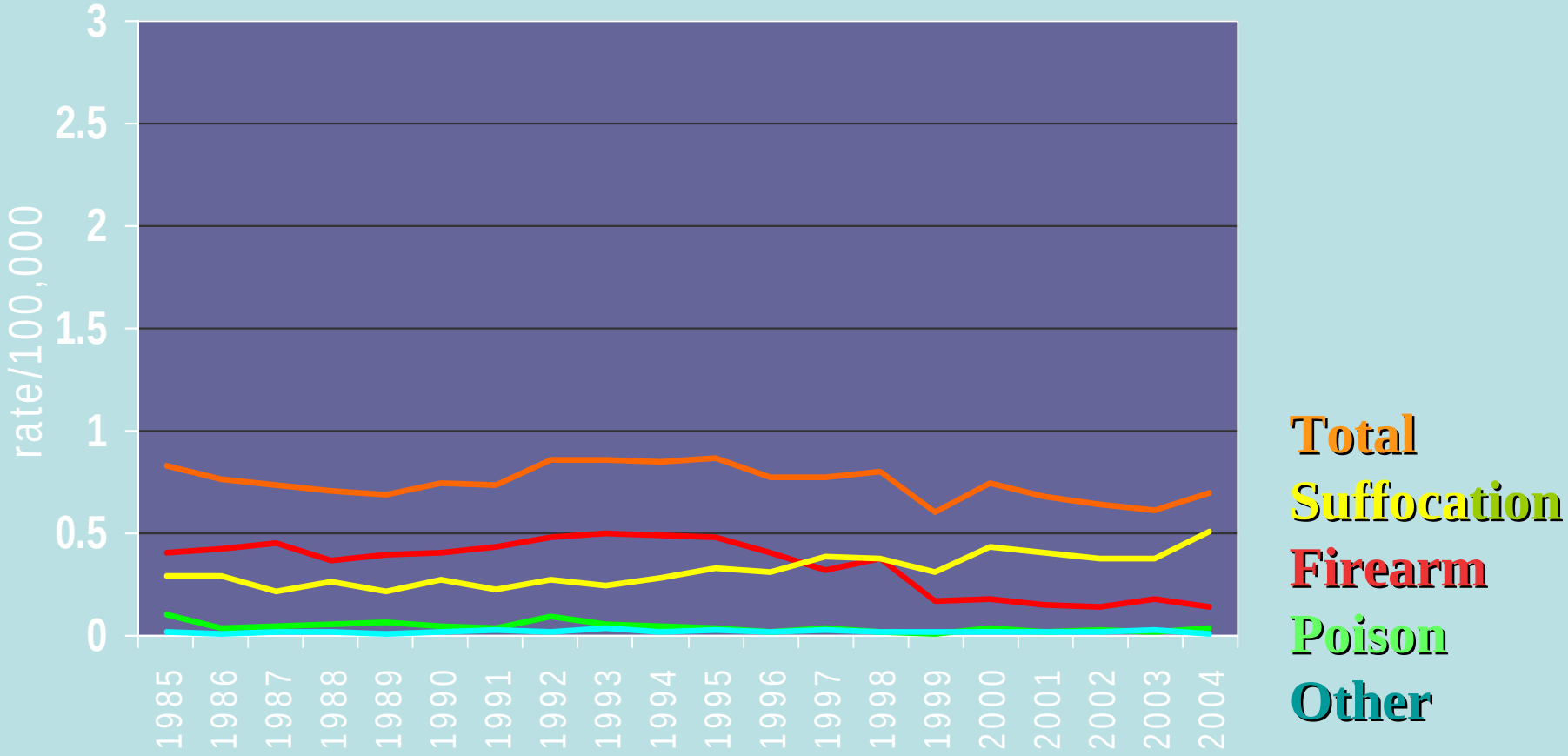
The suicide rate for young adults did not begin to decline until the mid-90s and then declined sharply. During the 10 years 1995-2004, suicides dropped an average of 2.4% annually, closely mirroring drops in firearm suicides. Suffocations have been increasing.

Suicide Rate, 15-19 year-olds



The suicide rate for teens began declining sharply in the mid-90s. During the 10 years 1994-2003, suicides dropped an average of 3.8% annually, or 33% when comparing 1994 with 2003. Rates rose in 2004. Suffocations increased in the 2000s.

Suicide Rate, 5-14 year-olds



The suicide rate for children is very low (see change in scale on left axis) and is based on relatively small numbers (250-300 deaths per year). The rate began to decline in the mid-90s. This is the one age group in which suffocations have begun outnumbering shootings.

YRBSS

National Youth Risk Behavior Survey: 1991-2005

Trends in the Prevalence of Suicide Ideation and Attempts

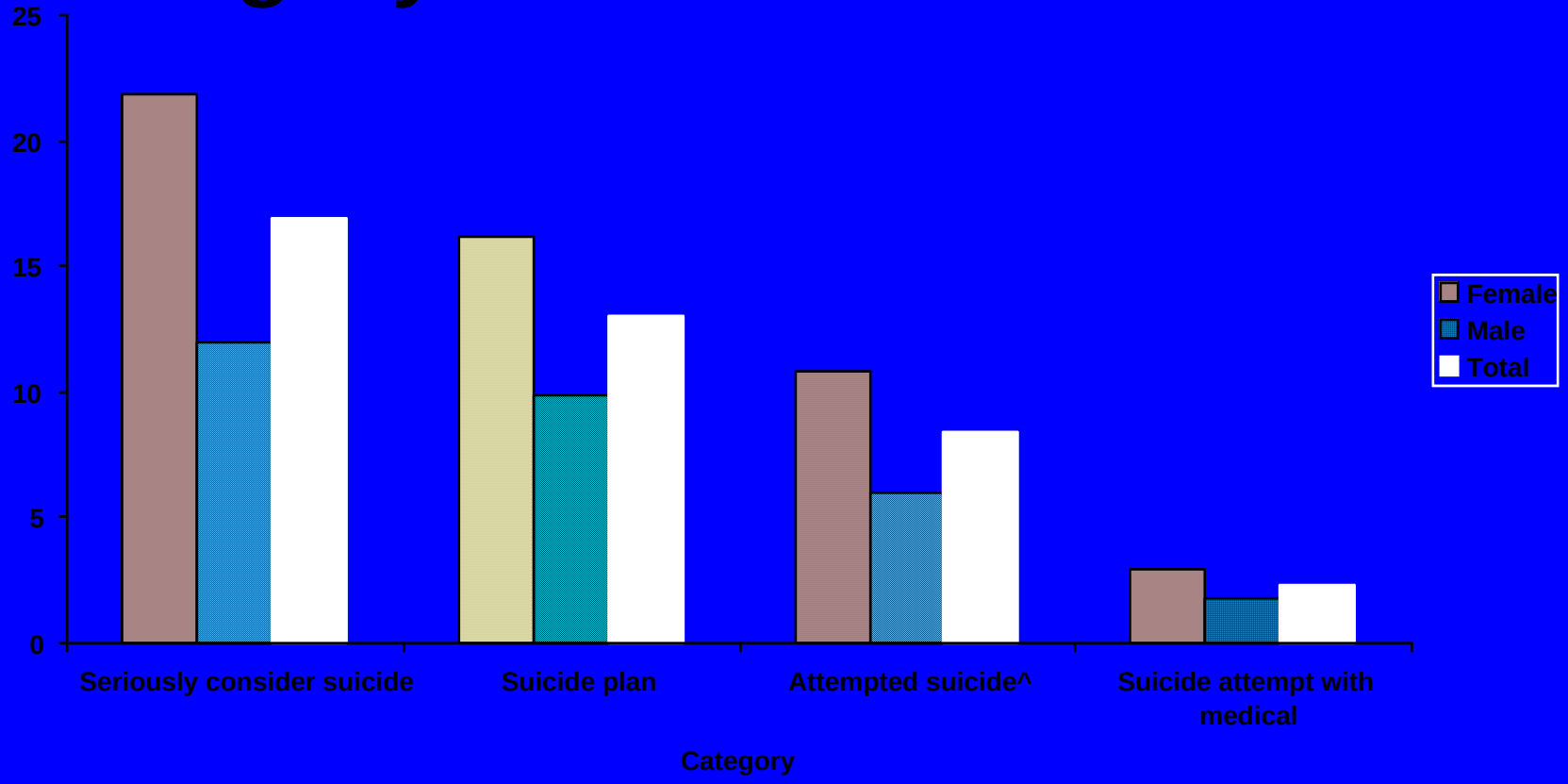
What Is the National Youth Risk Behavior Survey (YRBS)?

The national YRBS monitors priority health risk behaviors that contribute to the leading causes of death, disability, and social problems among youth and adults in the United States. The national YRBS is conducted every two years during the spring semester and provides data representative of 9th through 12th grade students in public and private schools throughout the United States.

1991	1993	1995	1997	1999	2001	2003	2005	Changes from 1991 – 2005[1]	Change from 2003 – 2005[2]
Seriously considered attempting suicide (During the 12 months preceding the survey.)									
29.0 (±1.5)[3]	24.1 (±0.9)	24.1 (±1.1)	20.5 (±2.3)	19.3 (±1.2)	19.0 (±1.4)	16.9 (±0.7)	16.9 (±0.9)	Decreased, 1991 – 2003 No change, 2003 – 2005	No change
Made a suicide plan (During the 12 months preceding the survey.)									
18.6 (±1.5)	19.0 (±1.1)	17.7 (±1.4)	15.7 (±1.3)	14.5 (±1.4)	14.8 (±1.1)	16.5 (±3.5)	13.0 (±0.9)	Decreased, 1991 – 2005	No change
Attempted suicide (One or more times during the 12 months preceding the survey.)									
7.3 (±0.9)	8.6 (±0.8)	8.7 (±0.8)	7.7 (±0.9)	8.3 (±1.0)	8.8 (±0.8)	8.5 (±1.1)	8.4 (±0.9)	No change, 1991 – 2005	No change

[1] Based on linear and quadratic trend analyses using a logistic regression model controlling for sex, race/ethnicity, and grade.
[2] Based on t-test analyses.
[3] 95% confidence interval.

Suicidal ideation and behavior among high school students by category and sex*,U. S., 2005

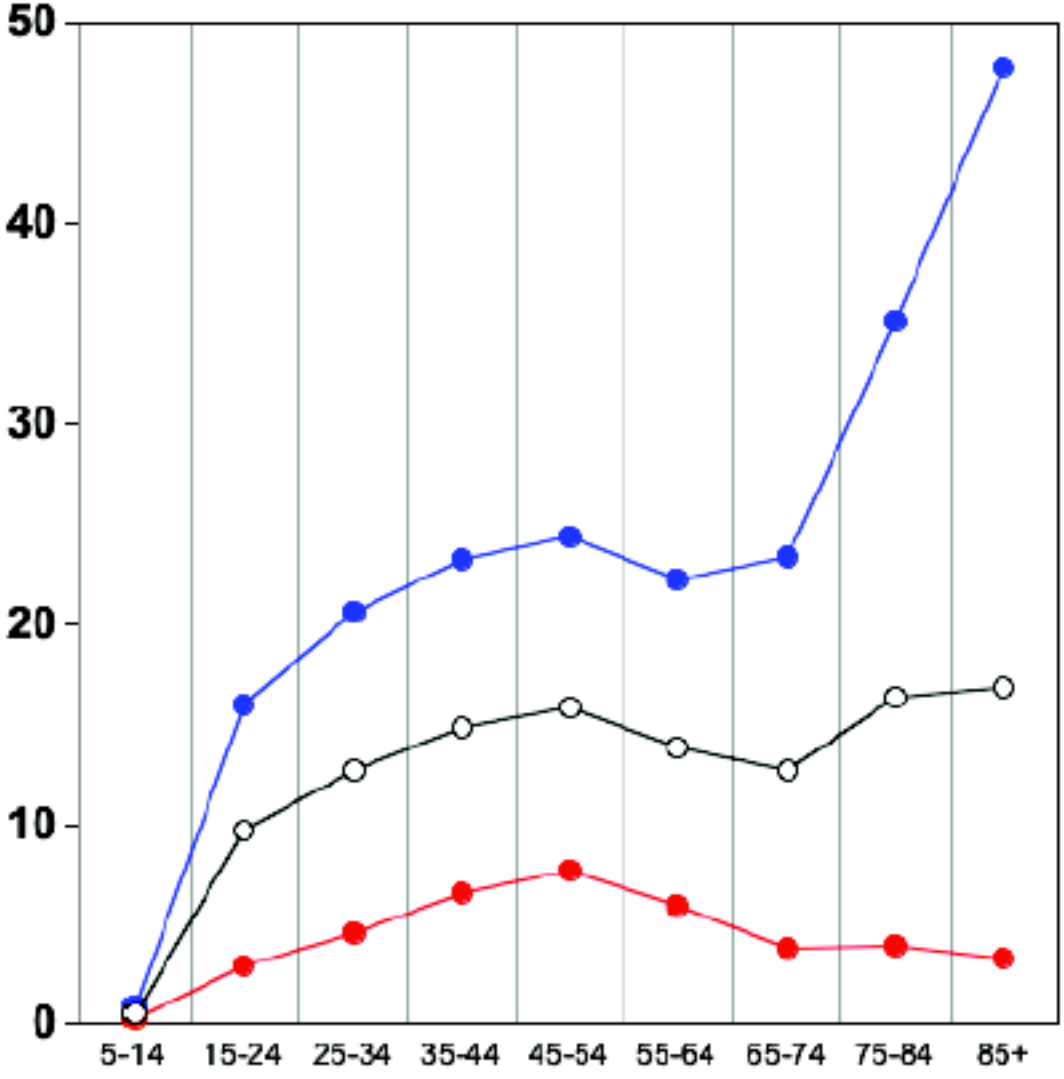


Source: CDC Youth Risk Behavior Survey
* During the 12 months preceding the survey
^One or more times

ELDER SUICIDE

USA Suicide by Age & Sex

Different age patterns for men and women



Men

Nation

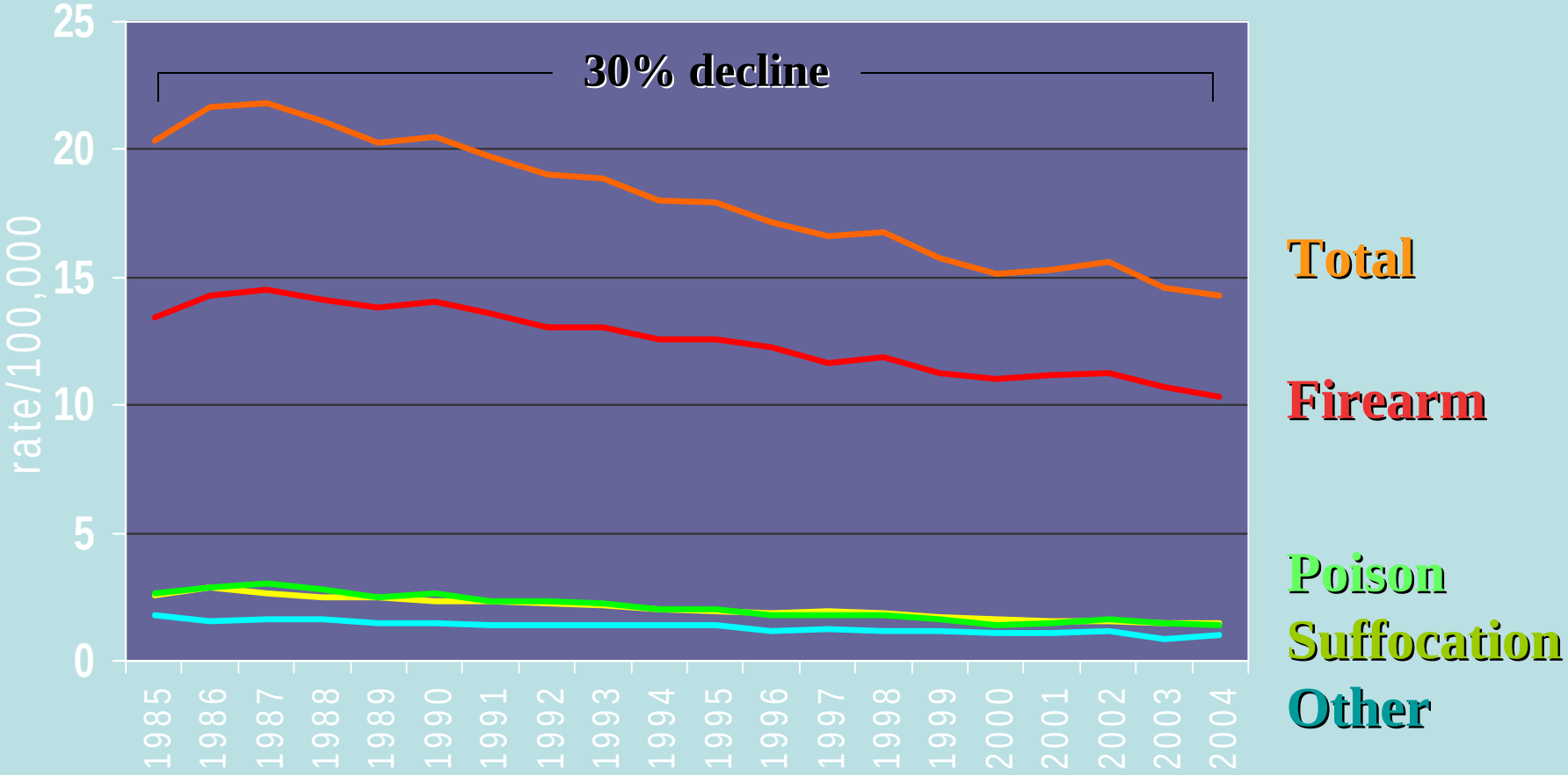
Women

2003 Data

Rate per 100,000 population

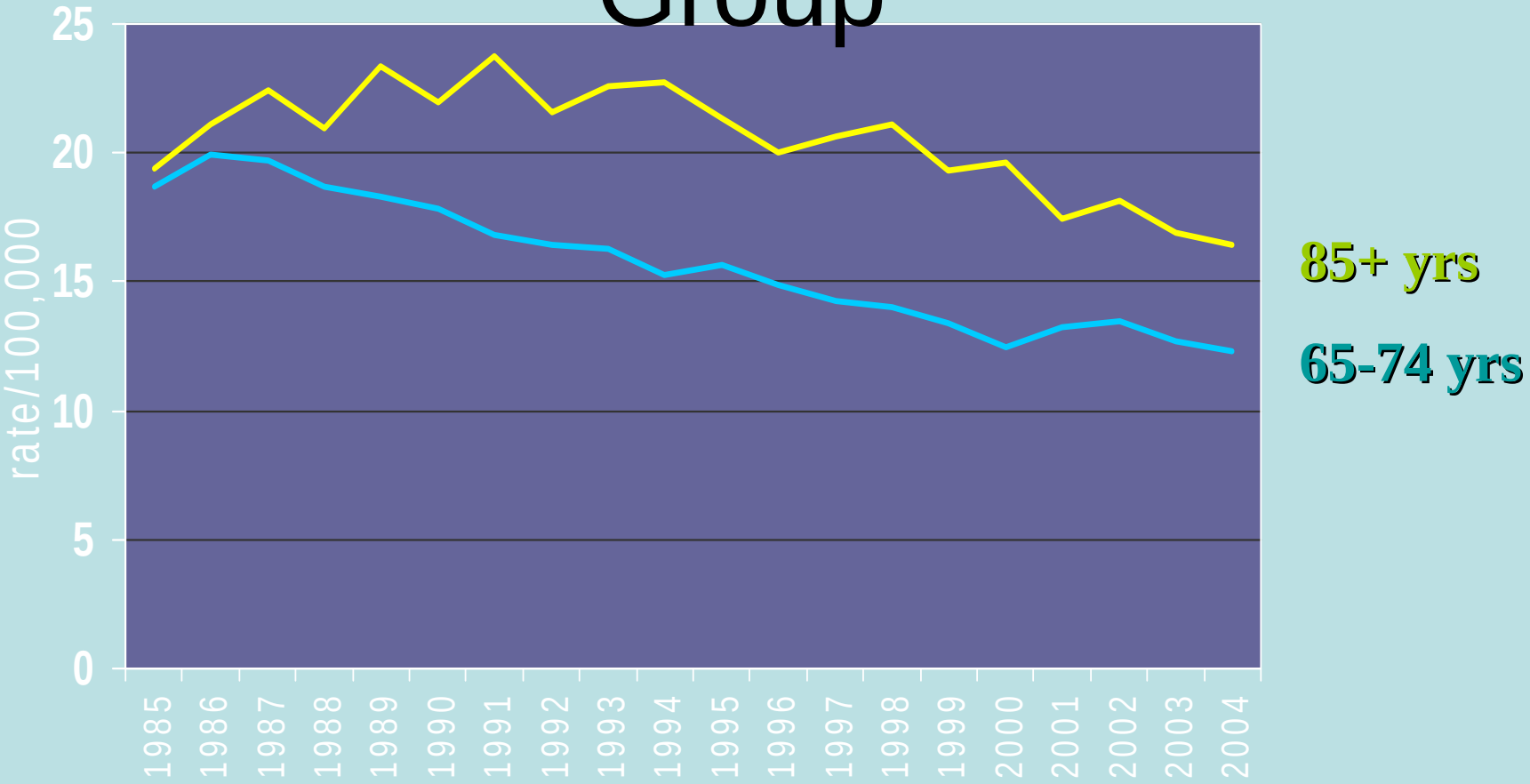
American Association of Suicidology

Suicide Rate, 65+ year-olds



The suicide rate for elders declined steadily by all methods; drops in firearm suicide were the major contributor. During the 20-year period, the rate declined an average of 1.8% annually, or about 30% when comparing the 1985 rate with the 2004 rate.

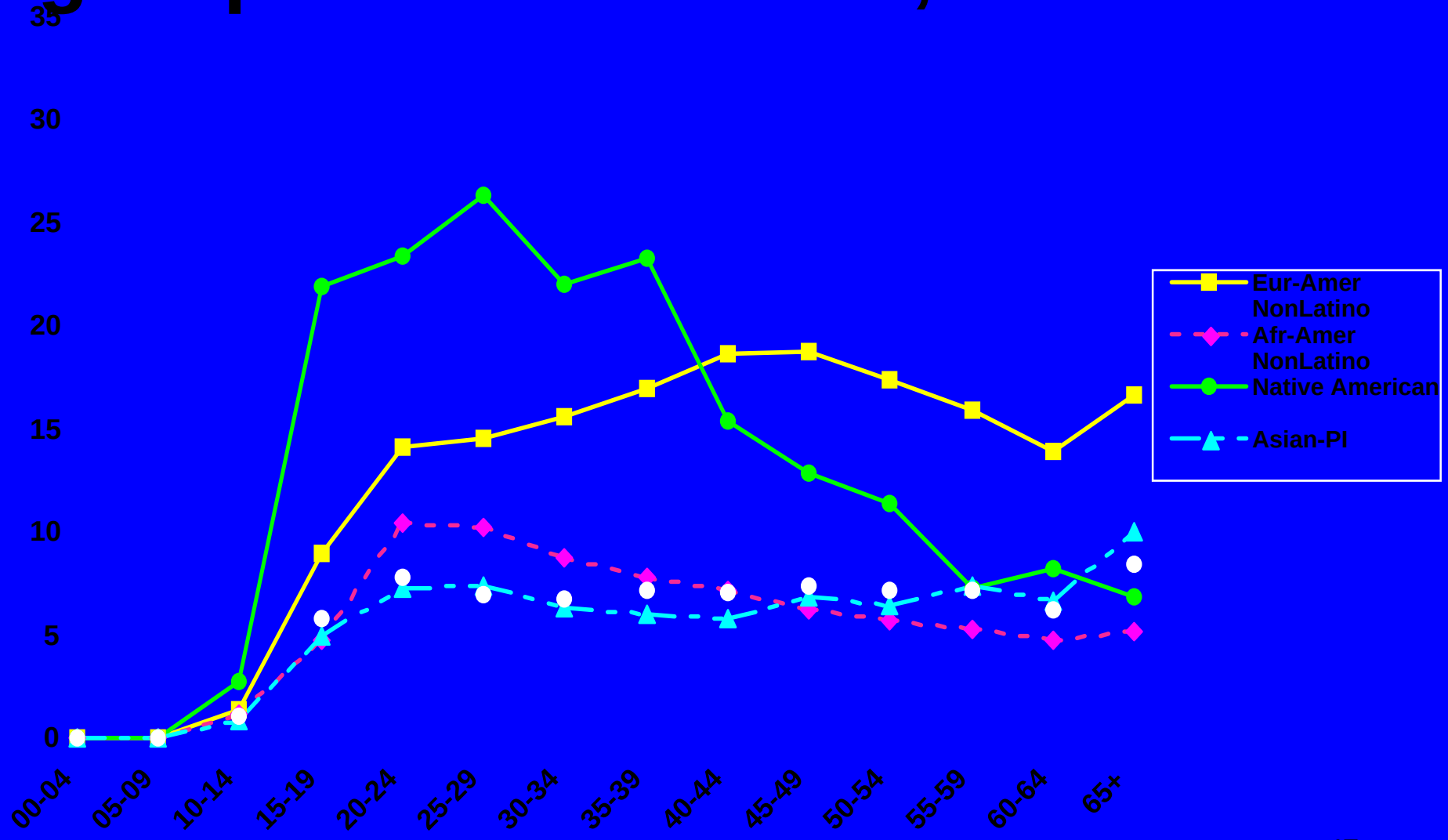
Suicide Rate, 65+ by Age Group



The decline in suicide rates among the older-old began more recently than among the younger-old.

SUICIDE BY RACE/ETHNICITY

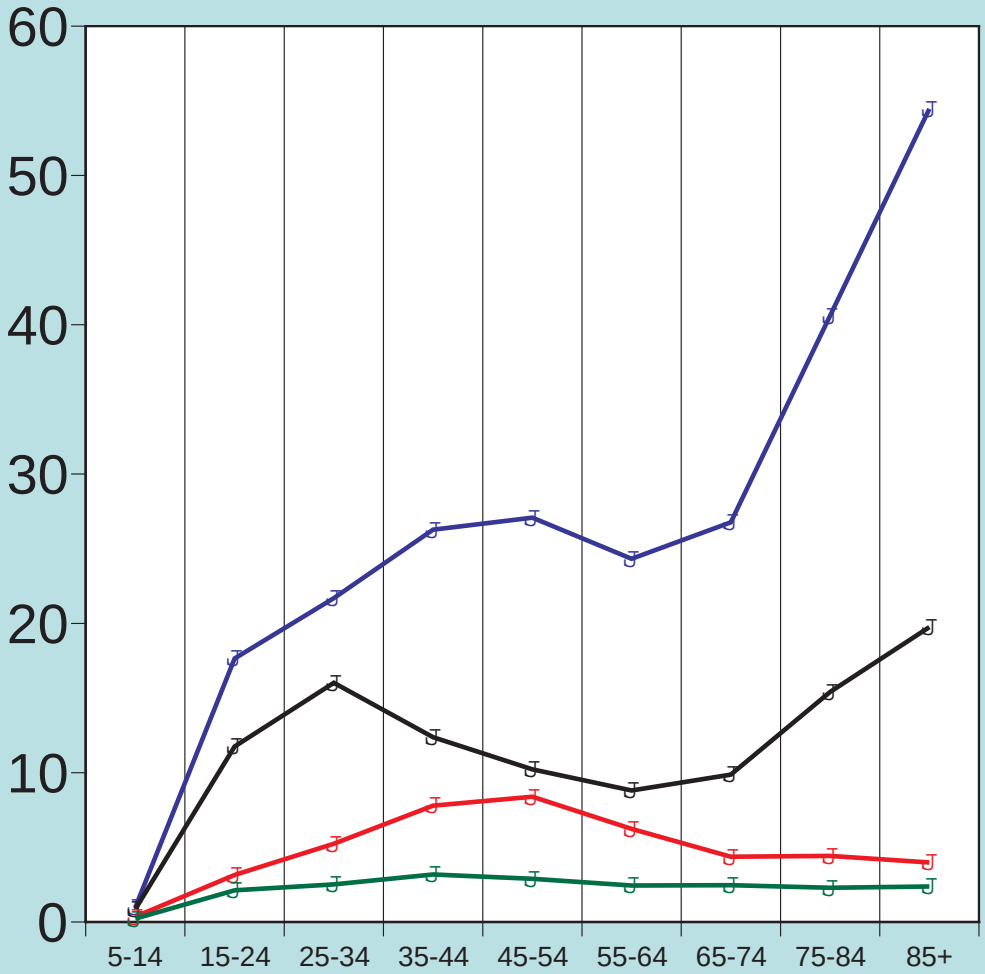
Suicide rates by ethnicity and age group -- United States, 1999-2004



Source: CDC vital statistics

Suicide Rates by Age/Gender/Race

- *Males at higher risk at all ages*
- *Different age patterns by race*



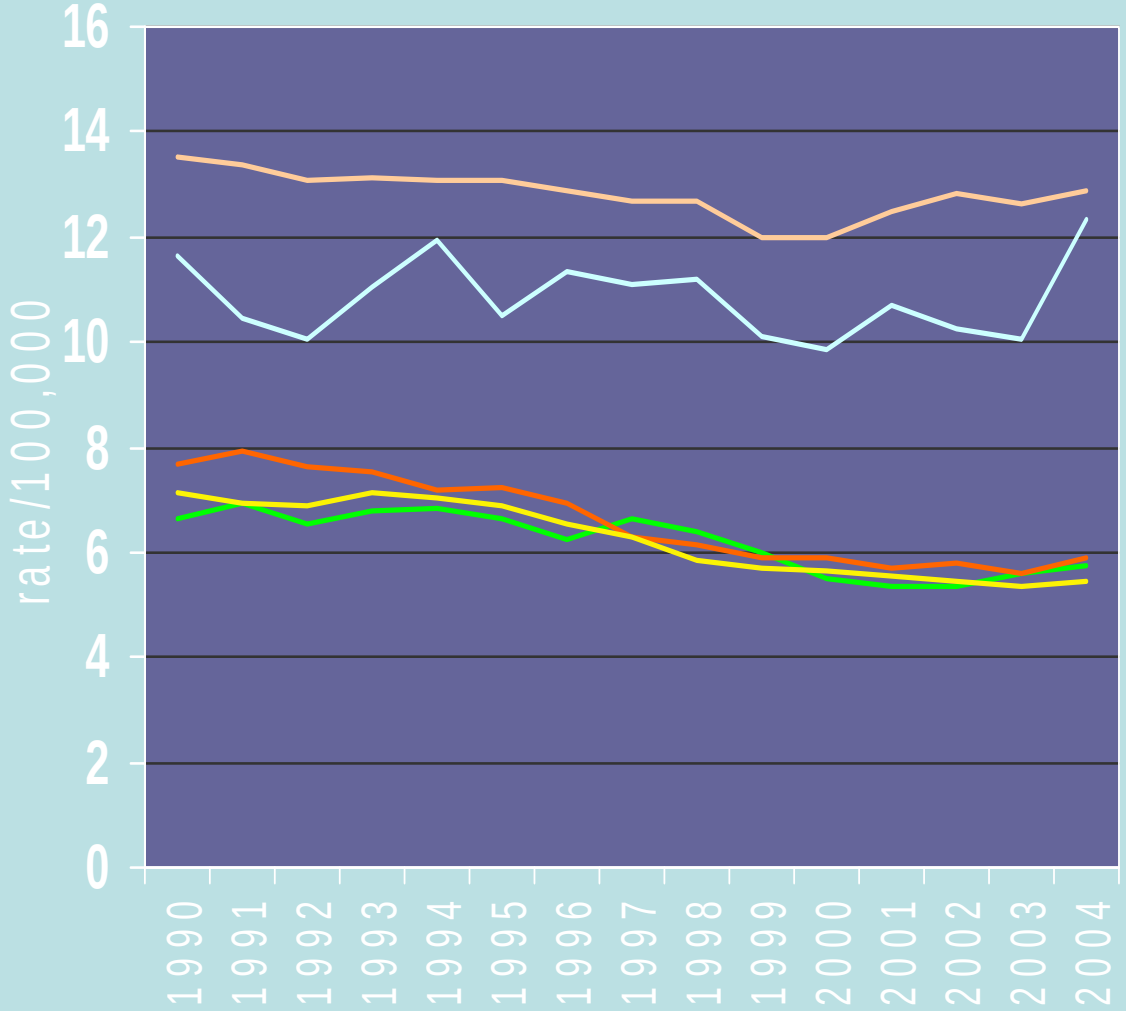
White Men

Nonwhite Men

White Women

Nonwhite Women

US Suicide Rate, by Race/Ethnicity



White Non-Hispanic

American Indian

Black Non-Hispanic

Hispanic

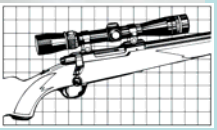
Asian

Note: Data on Hispanic ethnicity not available before 1990

SUICIDE BY METHOD

Methods in USA Suicides

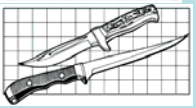
Method	% of Total	Number
Firearms	54.0%	17,108



Hanging, strangulation, suffocation	20.4%	6,462

Solid & Liquid Poisons	12.7%	4,016

Gas Poisons	4.6%	1,470



All Other Methods	8.2%	2,599

Firearms the leading method

31,655 total suicides

Note: Totals may not equal 100% due to rounding

SUICIDE AND PSYCHIATRIC ILLNESSES

Unnatural Causes of Death in The Mentally Ill

72,208 psychiatric pts. (1973-1993)

25% died of unnatural causes

- **With any psychiatric diagnosis:**

  SUICIDE: SMR = 1212(M); 1356 (F)

  HOMICIDE: SMR = 609(M); 632 (F)

  ACCIDENT: SMR = 466 (M); 318 (F)

Hiroeh, Appleby, et al; Lancet 358:2110-2112, 2001

How does suicide risk vary across psychiatric and medical disorders?

Condition	Standardized Mortality Ratio
Major Depression	20.4
Sedative Abuse	20.3
Bipolar Disorder	15.0
Opioid Abuse	14.0
Dysthymic Disorder	12.1
Schizophrenia	8.5
Alcohol Abuse	5.9
Epilepsy	5.1

Cited in Tondo & Baldessarini, 2001, Harris and Barraclough, 1998

Suicide Rates in Psychiatric Disorders

Table 1

Suicide risks in selected psychiatric disorders*

Condition	Relative risk	Incidence (%/year)	Lifetime risk (%)
Prior suicide attempt	38.4	0.549	27.5
Bipolar disorder	21.7	0.310	15.5
Major depression	20.4	0.292	14.6
Mixed drug abuse	19.2	0.275	14.7
Dysthymia	12.1	0.173	8.65
Obsessive-compulsive disorder	11.5	0.143	8.15
Panic disorder	10.0	0.160	7.15
Schizophrenia	8.45	0.121	6.05
Personality disorders	7.08	0.101	5.05
Alcohol abuse	5.86	0.084	4.20
Cancer	1.80	0.026	1.30
General population	1.00	0.014	0.72

* Estimated relative risks compared with the general population,[3] with recently updated information about bipolar disorders.[6] Annual rates are based on international general population average (14.3/100,000/year) X standardized mortality ratio; lifetime estimates are based on annual rates X 50 years as an estimate of lifetime exposure, or years at major risk.

Suicidal Behaviors and Schizophrenia

- 25-50% make at least 1 attempt
- 3-13% die by suicide
- Leading cause of early mortality (most common during 1st decade of illness)
- Leading cause of death by patients under the age of 35
- 3600 individuals with schizophrenia die by suicide each year in US
- Most common reason for hospitalization

Suicide in Bipolar Disorders

- **Suicide attempt** **25 - 50 %**
- **Suicide completion** **10 - 20 %**

Goodwin FK, Jamison KR. Manic Depressive Illness. 1990.

Suicidality in Depressed Teens

	IDEATION	ATTEMPT	SUICIDE
General Population	16.9%	8.5%	.008%
Clinical Populations with MDD	60%	30%	.05%

Fombonne 2001, Glied 2002, Gould 1998, Grunbaum 2002, Grunbaum 2004, Haavisto 2003, Hallfors 2004, Inamdar 1979, Kessler 1998, Kovacs 1993, Mitchell 1988, Patton 2000, Roberts 1995, Ryan 1987, Shaffer et al. 1996, Wichstrom 2000

DE47

Homeless Mentally Ill

- 30-day prevalence:
  - Suicidal Ideation: 37.5%
  - Recent Suicide Attempt: 7.9%
- Risk is highest among 30-39 y/o group
- Co-morbid alcohol and drug abuse increases risk in elderly

Prigerson et al., Soc Psych Psych Epid (2003) 38: 213-219.

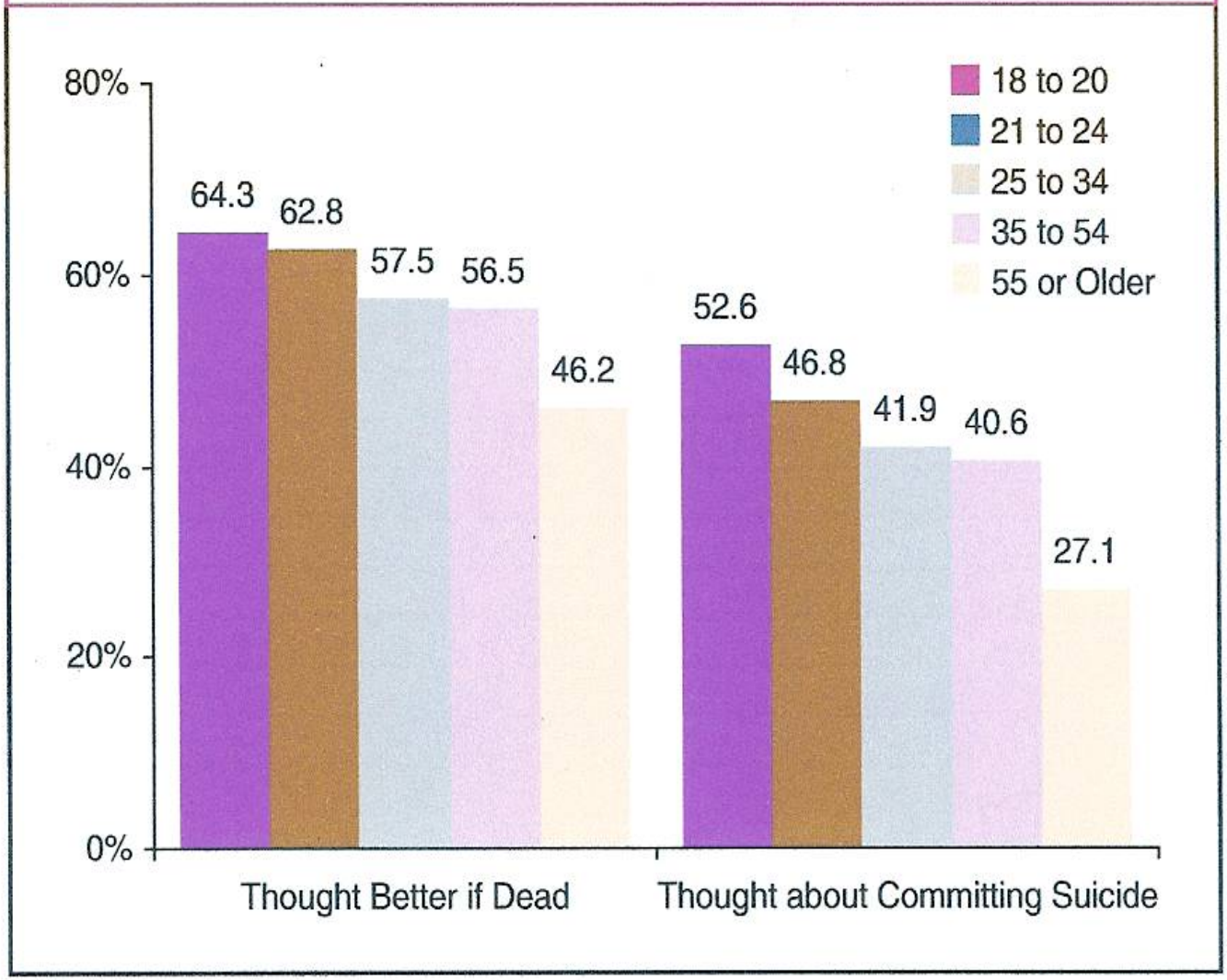
Office of Applied Studies

The OAS Report

Issue 34 2006

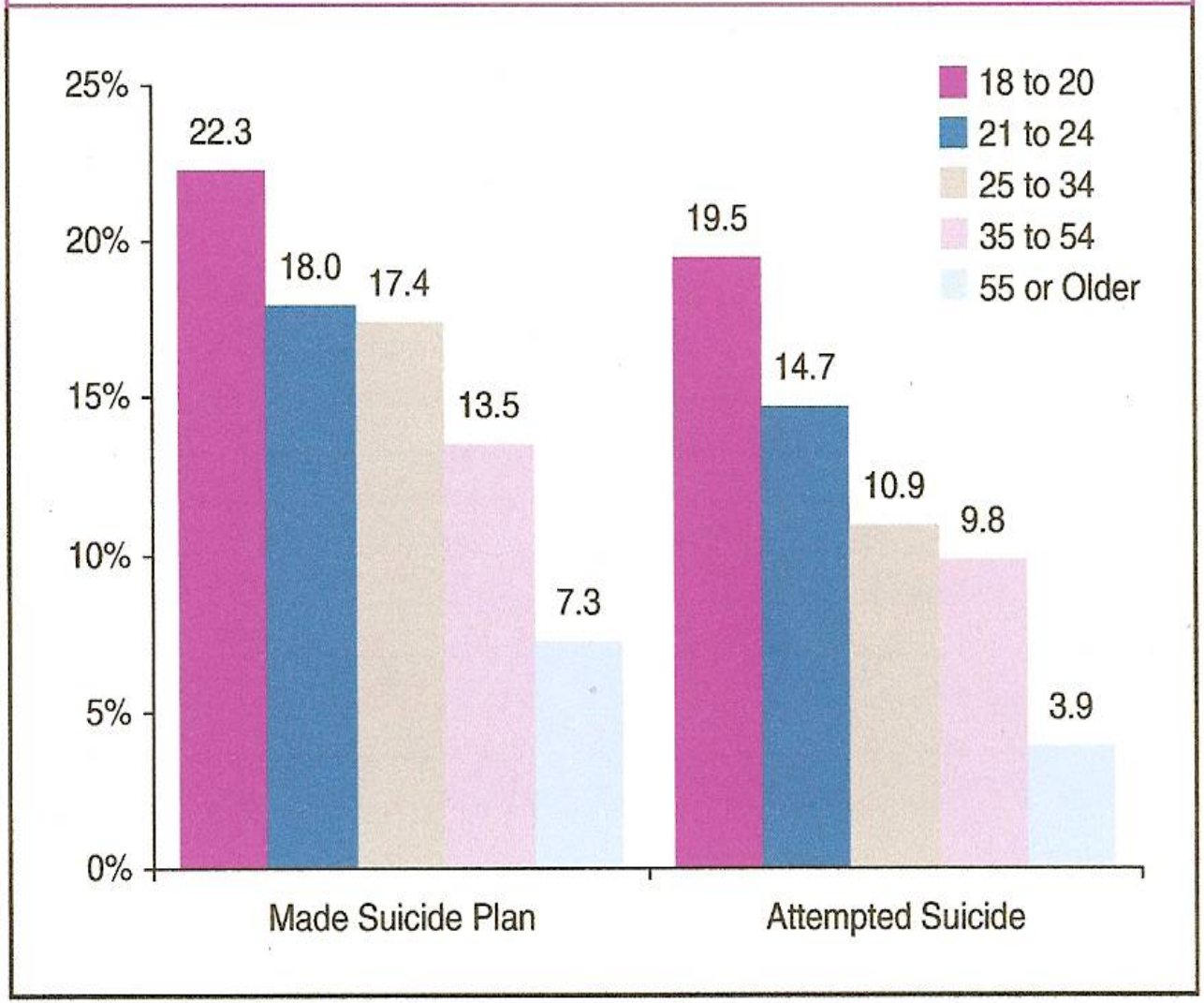
Suicidal Thoughts, Suicide Attempts, Major Depressive Episode, and Substance Use among Adults

Figure 2. Percentages Reporting Suicidal Thoughts among Adults Aged 18 or Older with a Past Year Major Depressive Episode, by Age Group: 2004 and 2005 NSDUHs



Source: SAMHSA, 2004 and 2005 NSDUHs.

Figure 3. Percentages Reporting Suicide Plans and Attempts among Adults Aged 18 or Older with a Past Year Major Depressive Episode, by Age Group: 2004 and 2005 NSDUHs



Source: SAMHSA, 2004 and 2005 NSDUHs.

SUICIDE AND MEDICAL ILLNESSES

Suicide and Medical Illness

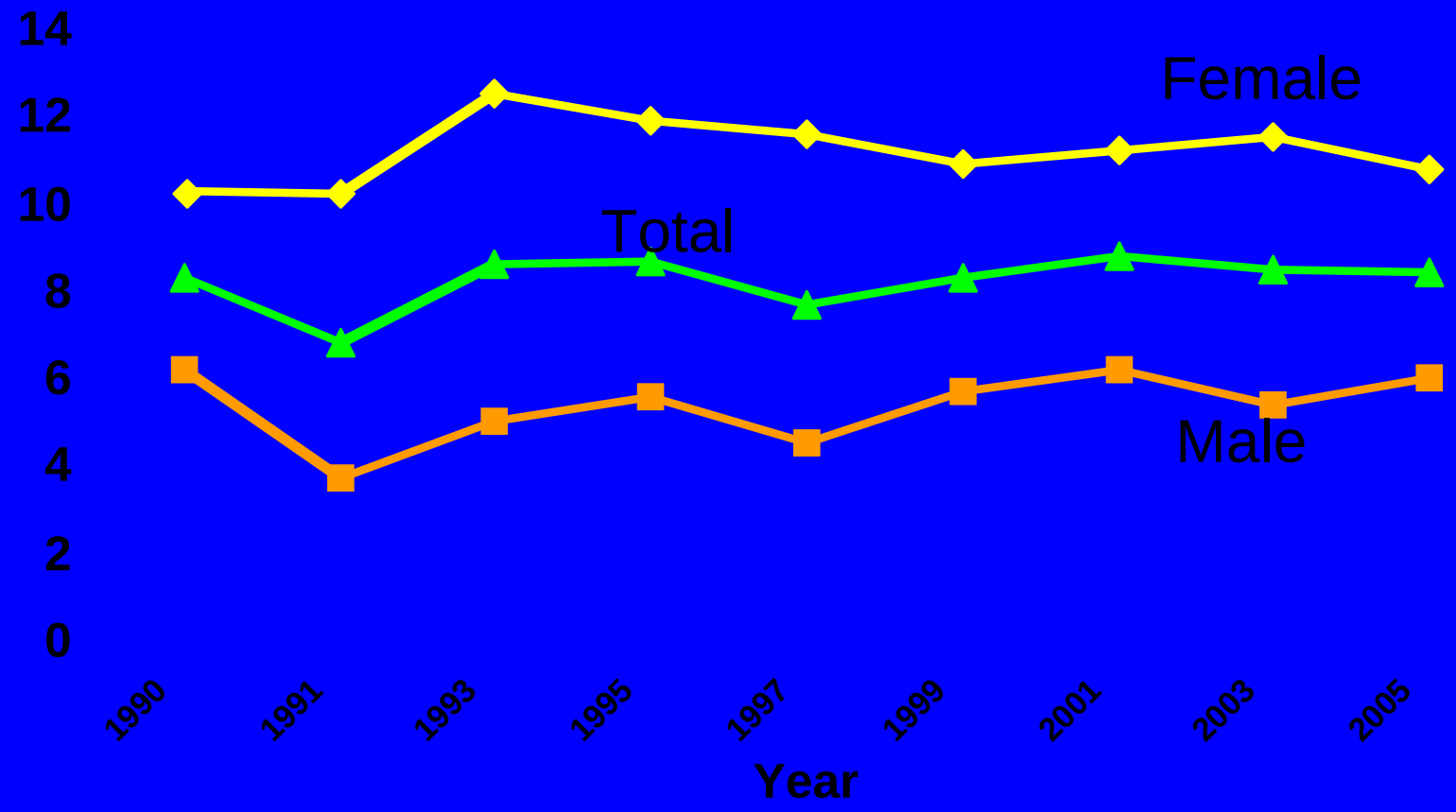
- CNS
  - tumors
  - spinal cord injury
  - multiple sclerosis
  - Huntington's disease
  - epilepsy (TLE)

- Malignant neoplasms
- HIV/AIDS
- Peptic ulcer
- Renal disease
- SLE

Harris EC, Barraclough BM. Medicine 73:281-296, 1994

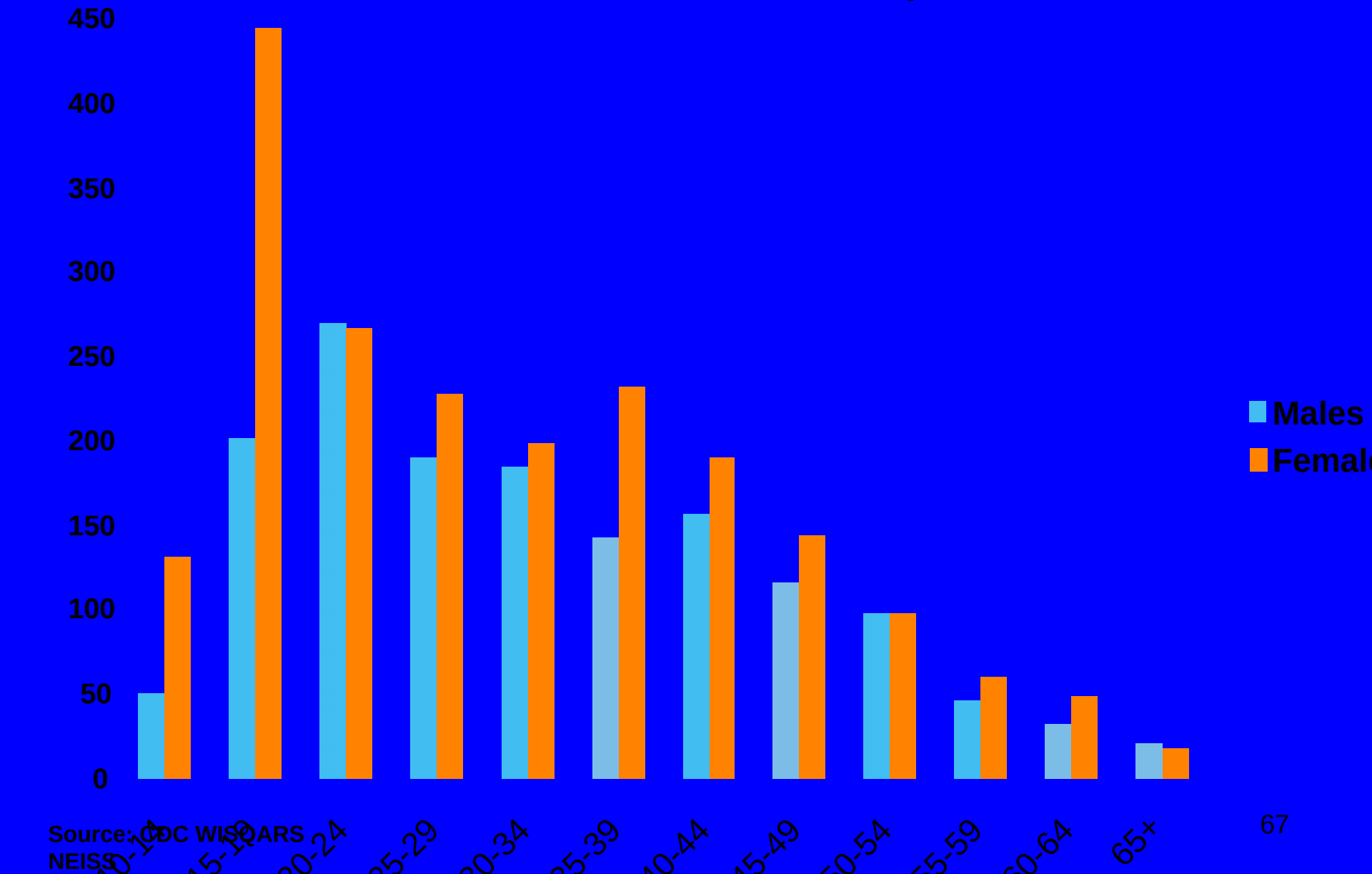
SUICIDE ATTEMPTS

Percentage of high school students who report a suicide attempt by sex 1990-2005



Source: Youth Risk Behavior Surveillance System
*At least one attempt during the 12 months preceding the survey

Self-inflicted injury among all persons by age and sex--United States, 2005



Source: CDC WISQARS NEISS

National Comorbidity Study

(1990-92; 15-54 yrs; 5877 respondents)

Cumulative Probabilities for Transition:

Ideation → Plan 34%

Plan → Attempt 72%

Ideation → Unplanned Attempt 26%

Within 1 Year of Onset of IDEATION:

60% of all planned 1st attempts

90% of all unplanned first attempts

Kessler et al; AGP 56: 617-626, 1999

National Comorbidity Study

(1990-92; 15-54 yrs; 5877 respondents)

ATTEMPTERS

39.3% made a “serious” life-threatening attempt

13.3% made a “serious,” but “not fool-proof” method

47.3% made a “cry for help,” and did not want to die

Kessler et al; AGP 56: 617-626, 1999

WHY FOCUS ON SUICIDE ATTEMPTS?

Repetition of Suicide Attempts

A systematic review of 90 studies (80% from Europe, few from the US) suggested:

Risk of repeated suicide attempt is high.

- One of the major characteristics of suicide attempt behavior
- 16% (12-22%) repetition within one year of an attempt
- 21% (12-30%) within 1-4 years
- 23% (11-32%) within 4 or more years

Owens et al., 2002

Repetition of Suicide Attempts

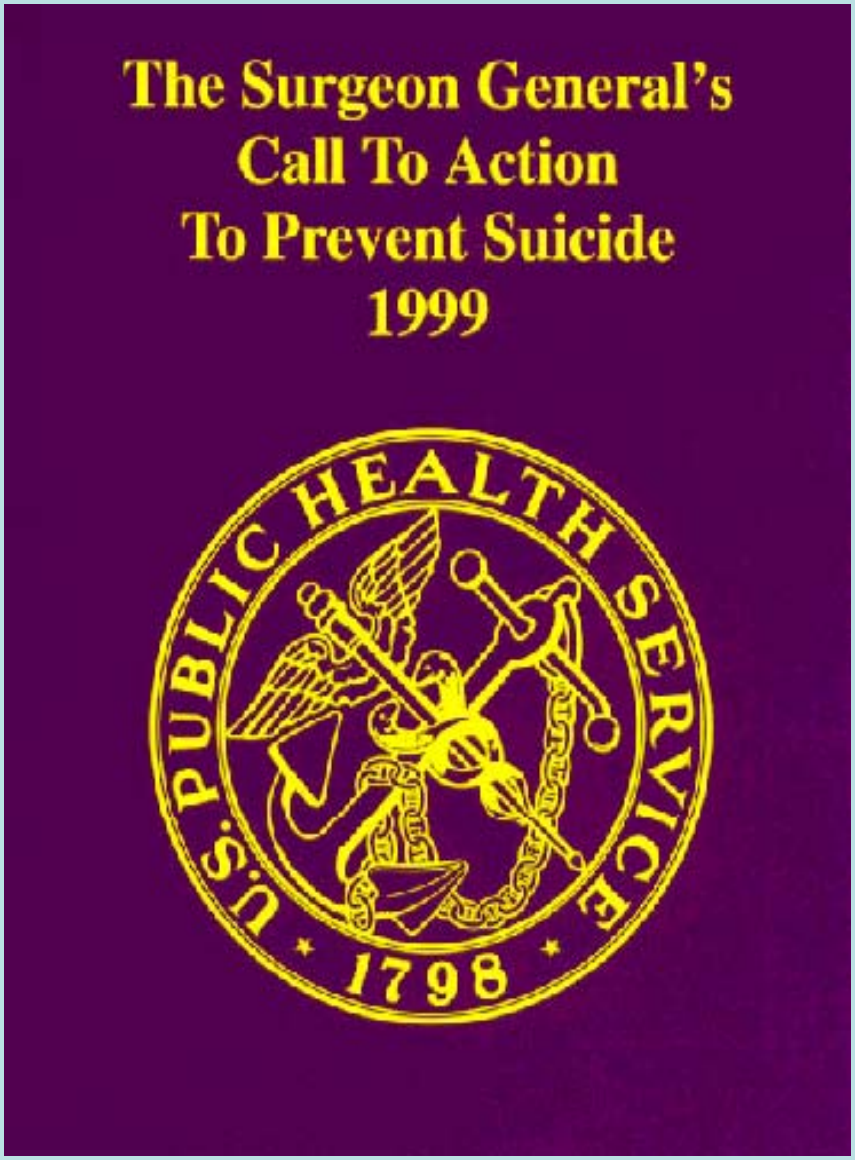
Risk of Suicide

1.8 %	(0.8 - 2.6%)	within 1 yr of an attempt
3.0 %	(2.0 - 4.4%)	within 1- 4 years
3.4 %	(2.5 - 6.0%)	within 5-10 years
6.7 %	(5.0 -11.0%)	within 9 or more years

Owens et al., 2002

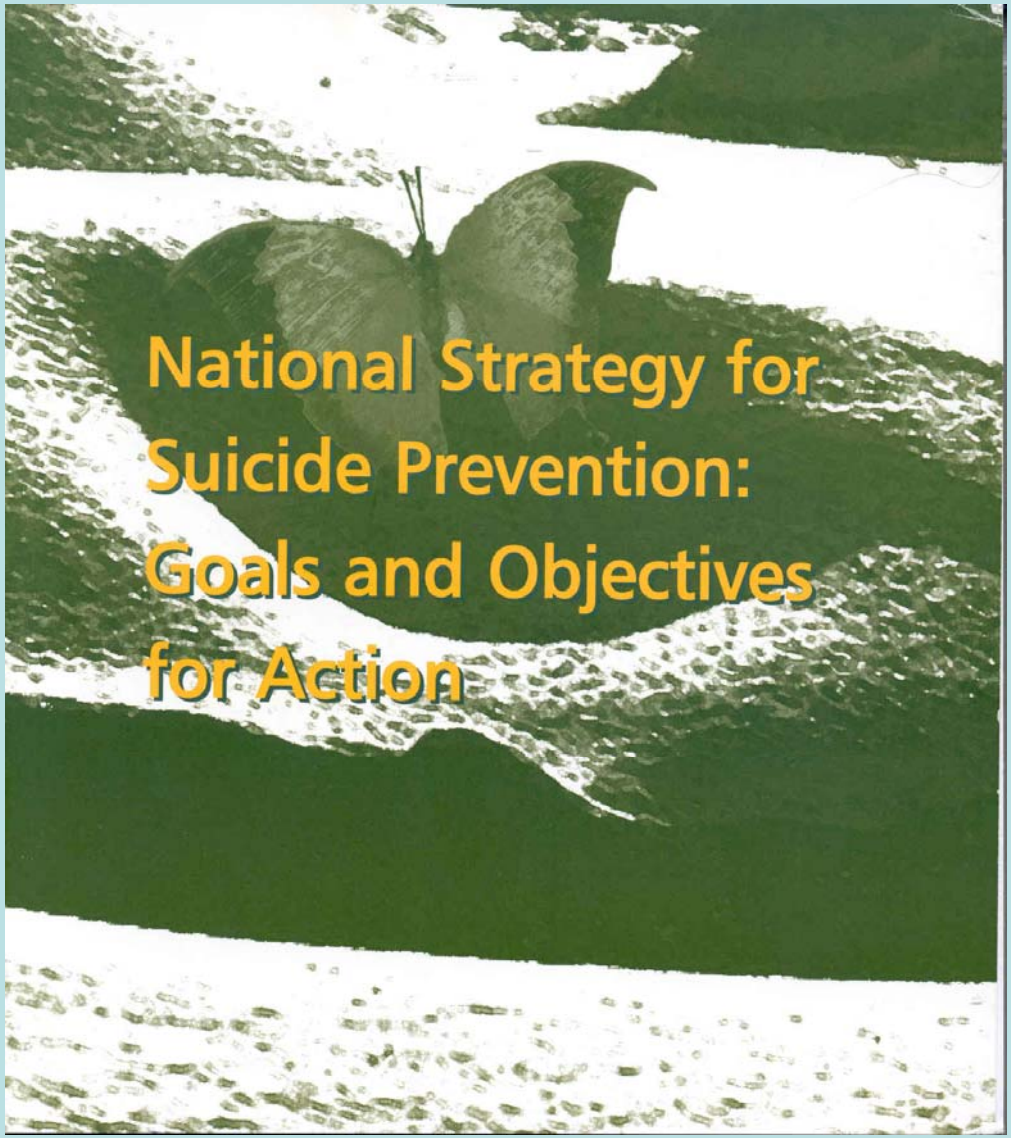
A NATIONAL RESPONSE

Emphasizing The Public Health Approach



SG's Call to Action to Prevent Suicide: AIM to Prevent Suicide

- **Awareness:** Broaden the public's awareness of suicide and its risk factors
- **Intervention:** Enhance services and programs, both population-based and clinical care
- **Methodology:** Advance the science of suicide prevention



National Strategy for Suicide Prevention

NSSP Goals

Goal 1: Promote Awareness that Suicide is a Public Health Problem that is Preventable

Goal 2: Develop Broad-based Support for Suicide Prevention

Goal 3: Develop and Implement Strategies to Reduce the Stigma Associated with Being a Consumer of Mental Health, Substance Abuse, and Suicide Prevention Services

Goal 4: Develop and Implement Suicide Prevention Programs

Goal 5: Promote Efforts to Reduce Access to Lethal Means and Methods of Self-Harm

NSSP Goals

Goal 6: Implement Training For Recognition of At-Risk Behavior and Delivery of Effective Treatment

Goal 7: Develop and Promote Effective Clinical and Professional Practices

Goal 8: Improve Access to and Community Linkages with Mental Health and Substance Abuse Services

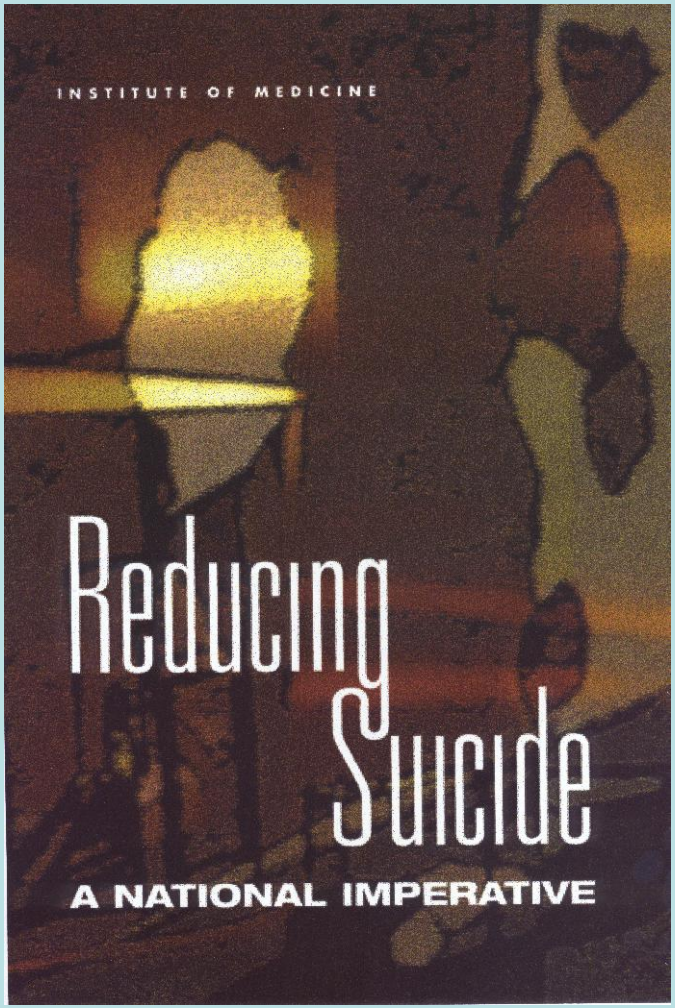
Goal 9: Improve Reporting and Portrayals of Suicidal Behavior, Mental Illness, and Substance Abuse in the Entertainment and News Media

Goal 10: Promote and Support Research on Suicide and Suicide Prevention

Goal 11: Improve and Expand Surveillance Systems

California Suicide Prevention Plan

IOM Report - 2002



"Programs that address **risk and protective factors** at multiple levels are likely to be most effective."

"Research suggests that coping skills can be taught."

Reducing Suicide: A National Imperative (2002)

Rec. 3: Because primary care providers are often the first and only medical contact of suicidal patients, tools for recognition and screening of patients should be developed and disseminated.

OTHER EFFORTS ELSEWHERE

Finland

Norway

U.K.

Sweden

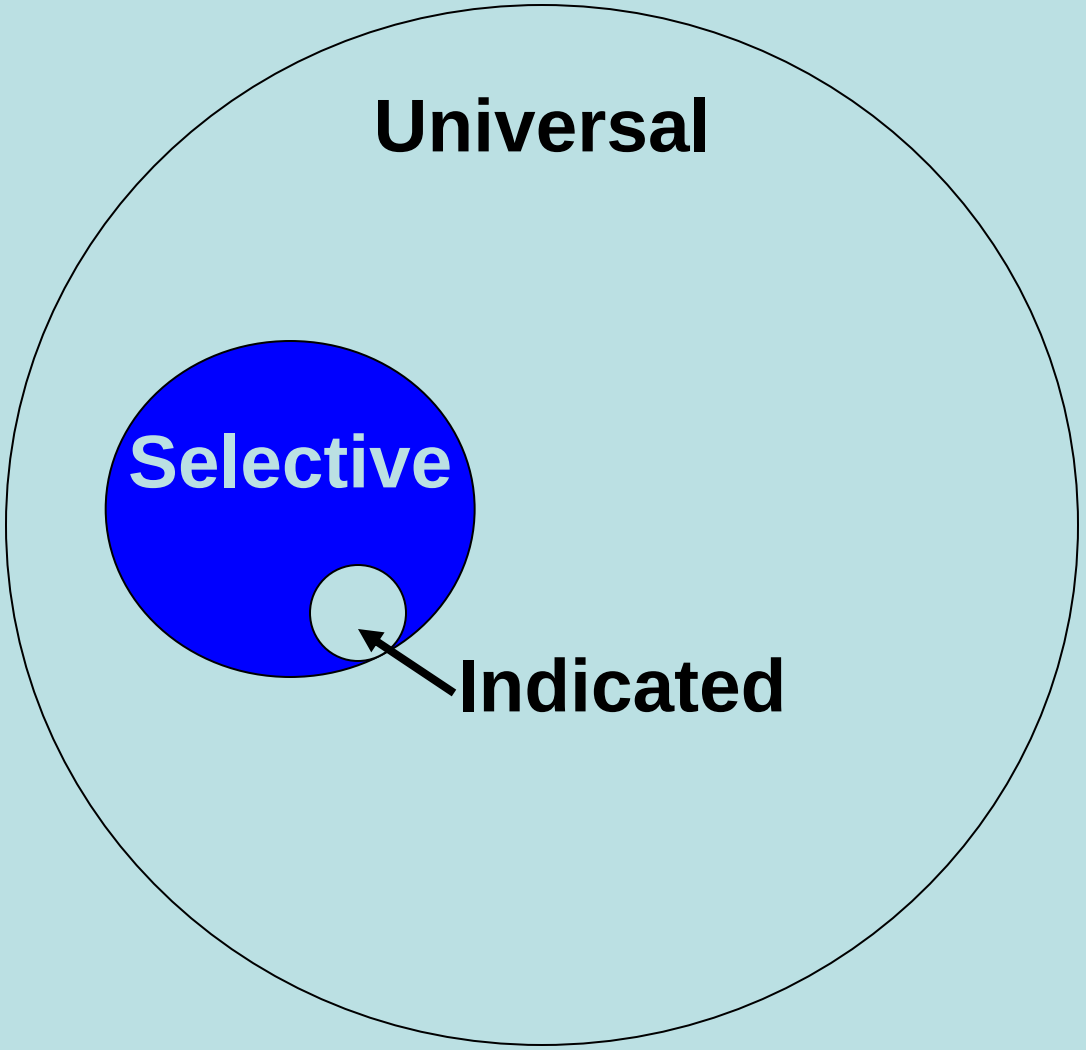
Australia

New Zealand

Scotland

A PUBLIC HEALTH APPROACH to SUICIDE PREVENTION

Populations Served by Prevention Programs can be Defined by Degrees of Risk



Universal: All members of a group

Selective: Members of a high risk group

Indicated: Individuals at highest risk

Gordon's Terminology to Describe Prevention Programs

"Universal" – focused on the entire population as the target → prevention through reducing risk and enhancing health – aimed broadly, but can affect individuals as well

"Selective" – high-risk groups where not all of the members bear risks → prevention through reducing specific risks among groups

"Indicated" – symptomatic and 'marked' high-risk individuals → interventions to prevent full-blown disorders or adverse outcomes in each one

Sites for Broad Population-Oriented Interventions

- Community-based, chosen irrespective of risk
- Wide dispersion of information and education – use of media
- "Gatekeeper" identification and education
- Examples: Worksites, religious and faith-based organizations, community NGOs, governmental agencies (e.g., social services, unemployment)

Universal Preventive Strategies

- Reduce the stigma of mental illness and treatment
- Education of the healthcare workforce
- Increase access to effective treatment
- Work to limit access to means
- Screen for mental disorders and suicidal risk in primary care

Selective Preventive Strategies

- Optimize treatment of mental illness
- Monitor for increased risk in mental health care
- Consider specific approaches:
  - Opioid maintenance
  - Clozapine for schizophrenia
  - Lithium for bipolar disorder

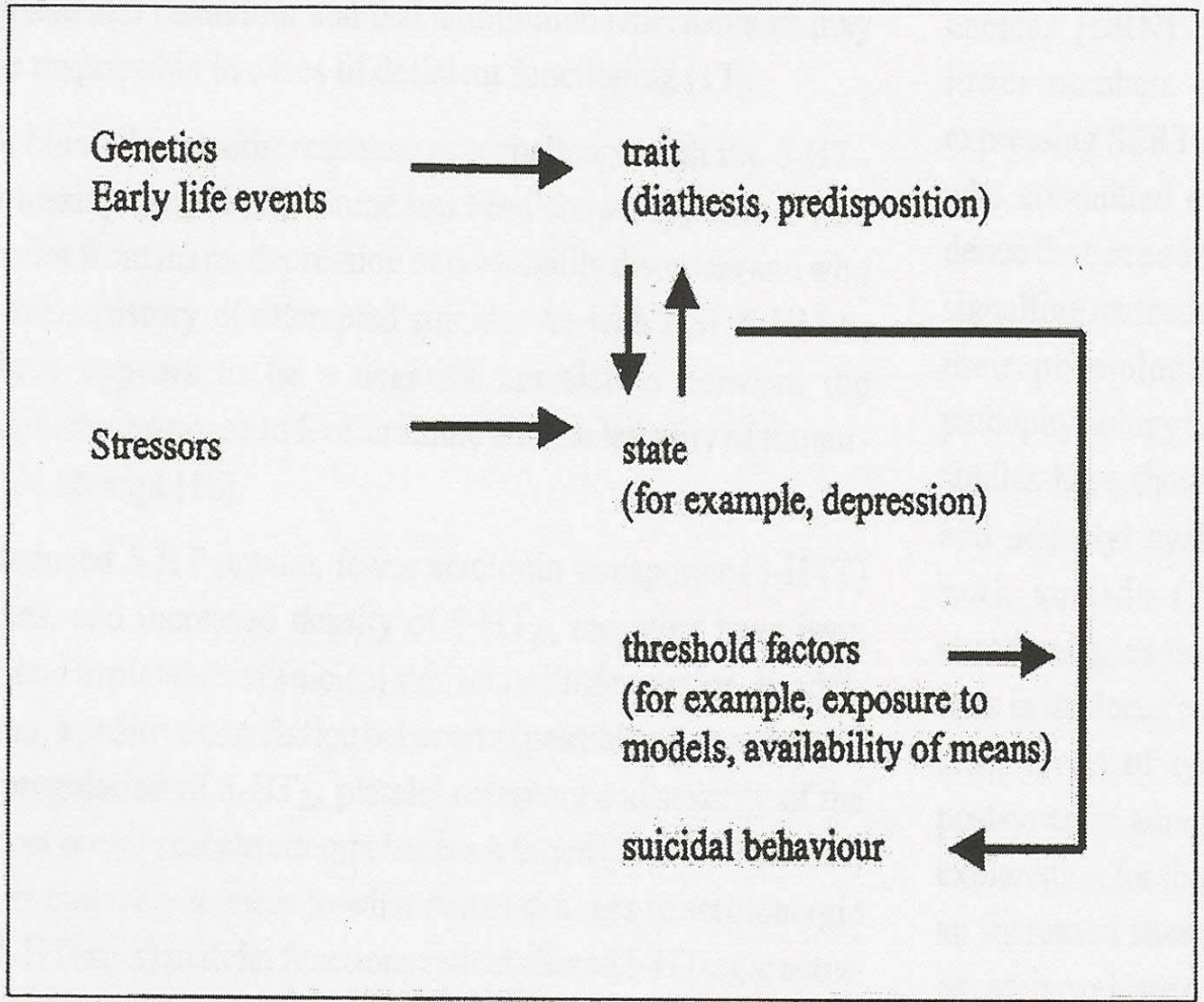
Indicated Preventive Strategies

- Acute hospitalization
- Identification of attempts
- Cognitive Behavioral Therapy for the prevention of suicide attempts

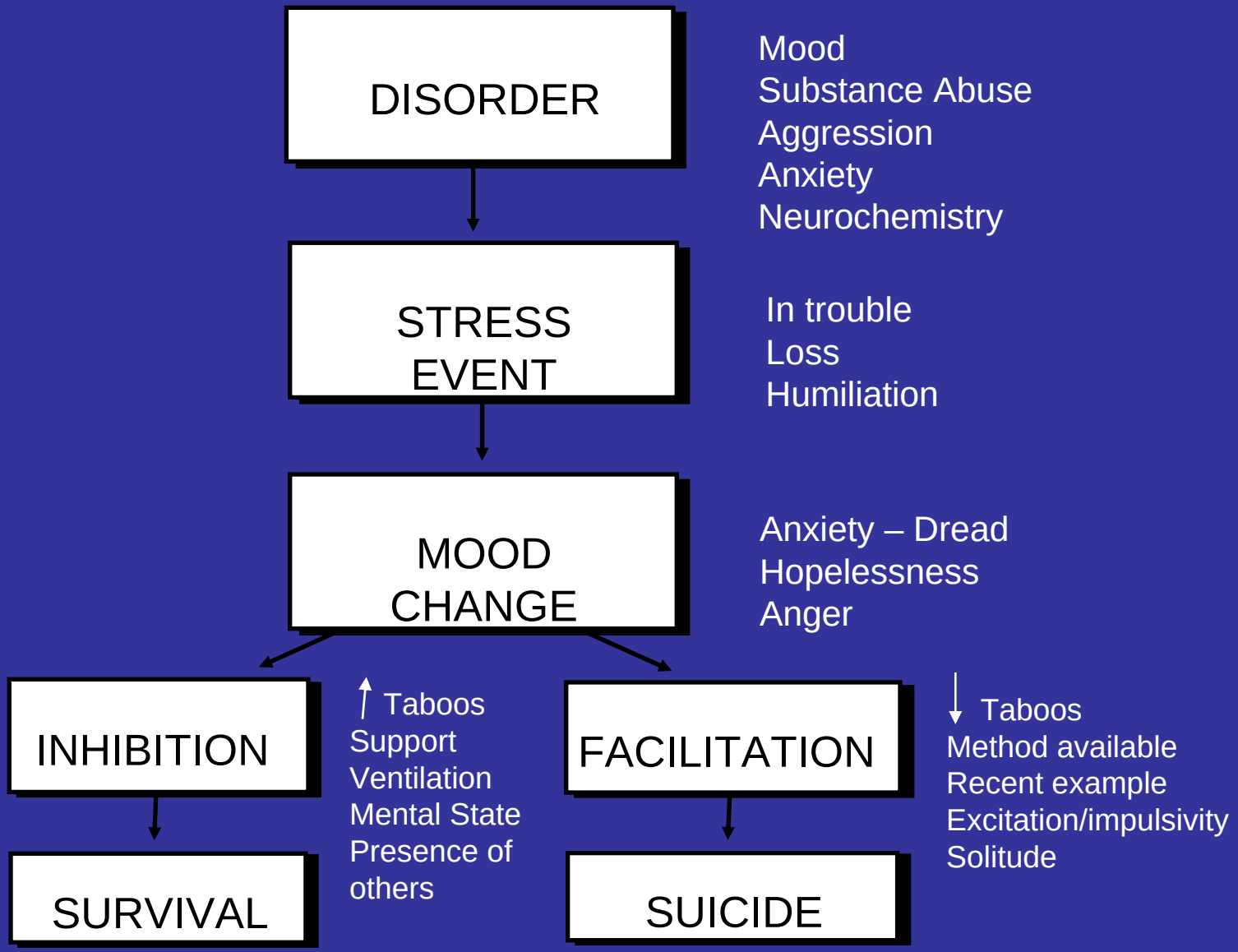
MODELS and FRAMEWORKS for ACTION

Stress-Diathesis Hypothesis

Figure 1 The state–trait interaction component of the process model

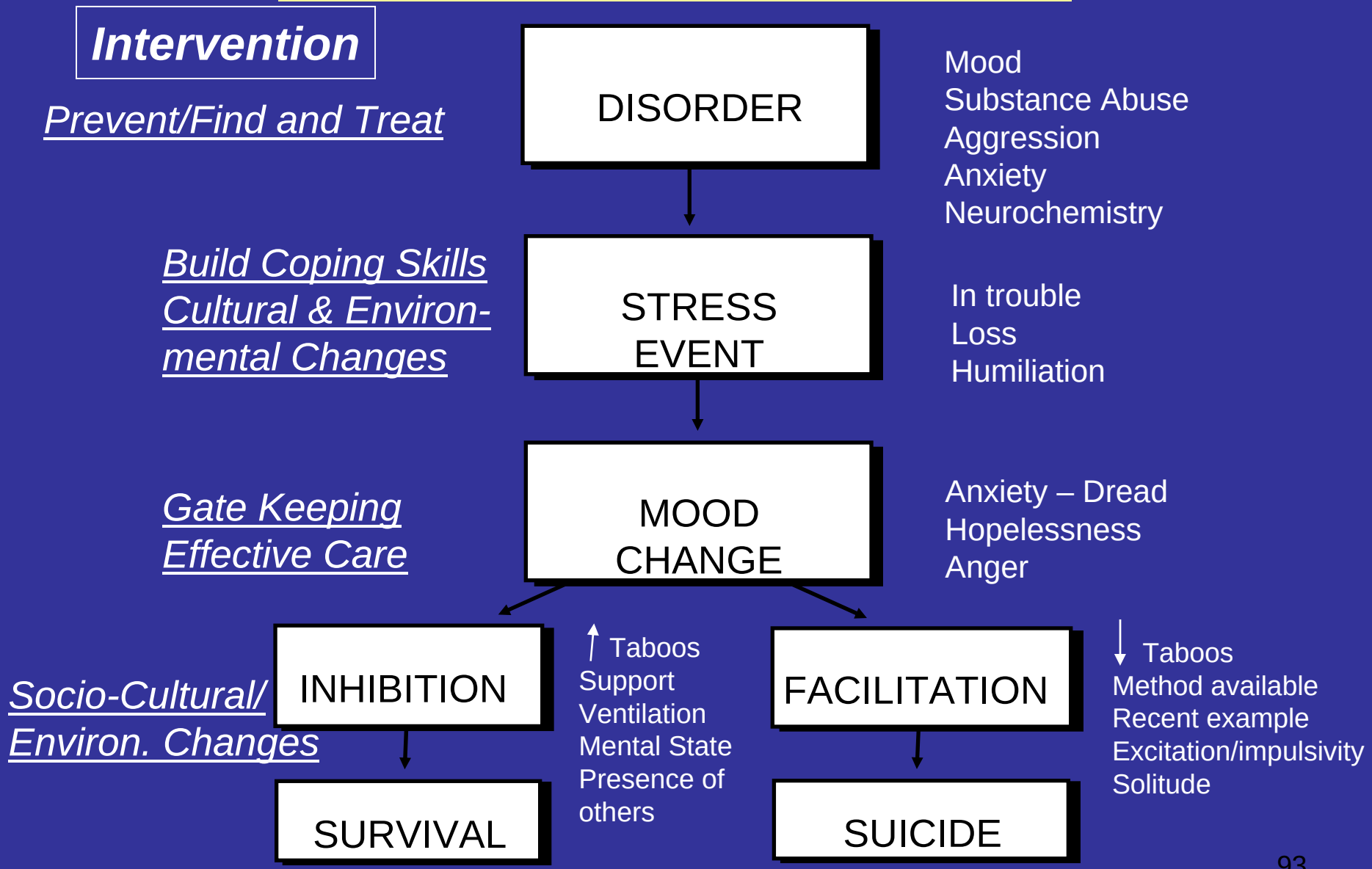


SUICIDE – A MODEL

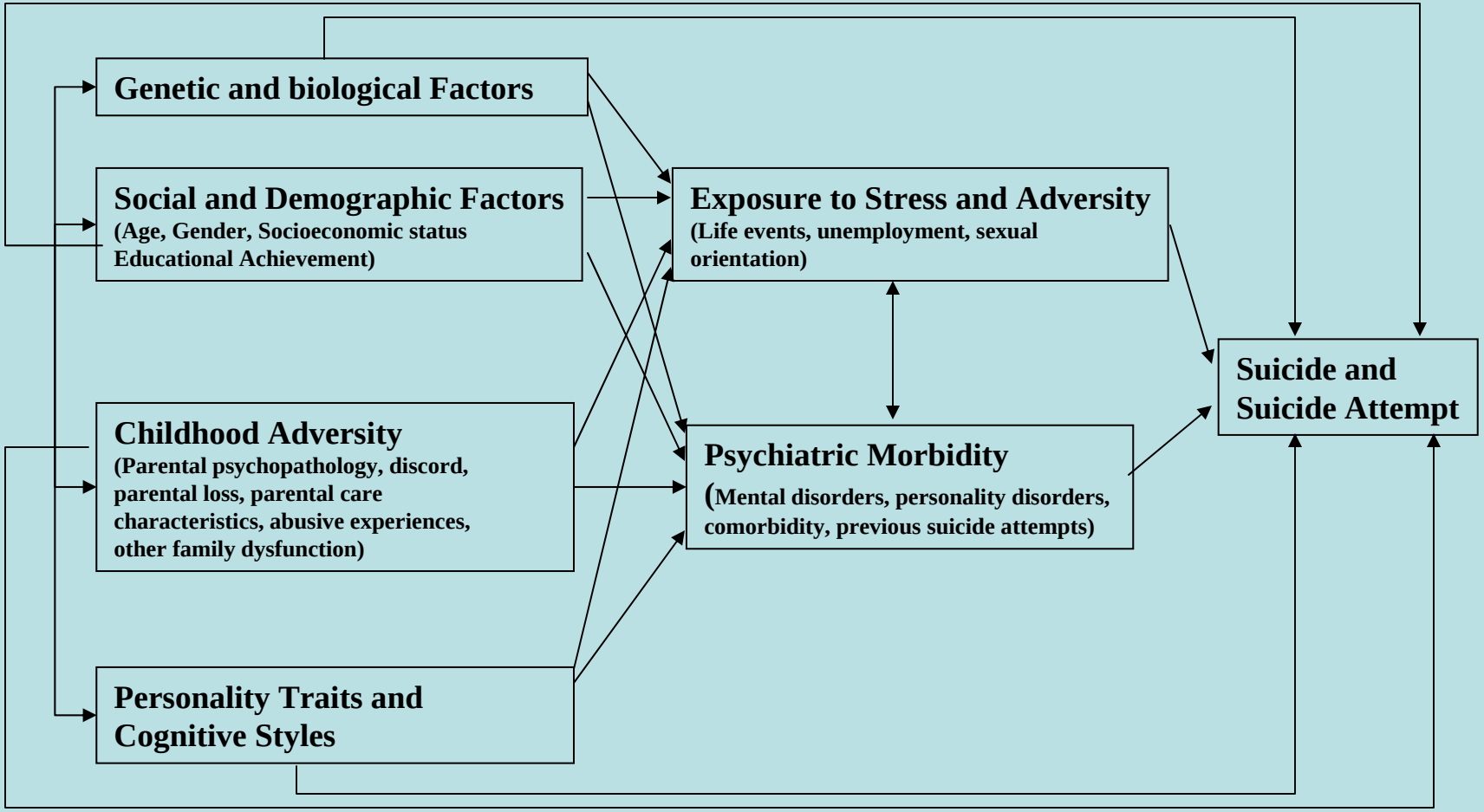


David Shaffer, M.D., Columbia U.

SUICIDE - A MODEL

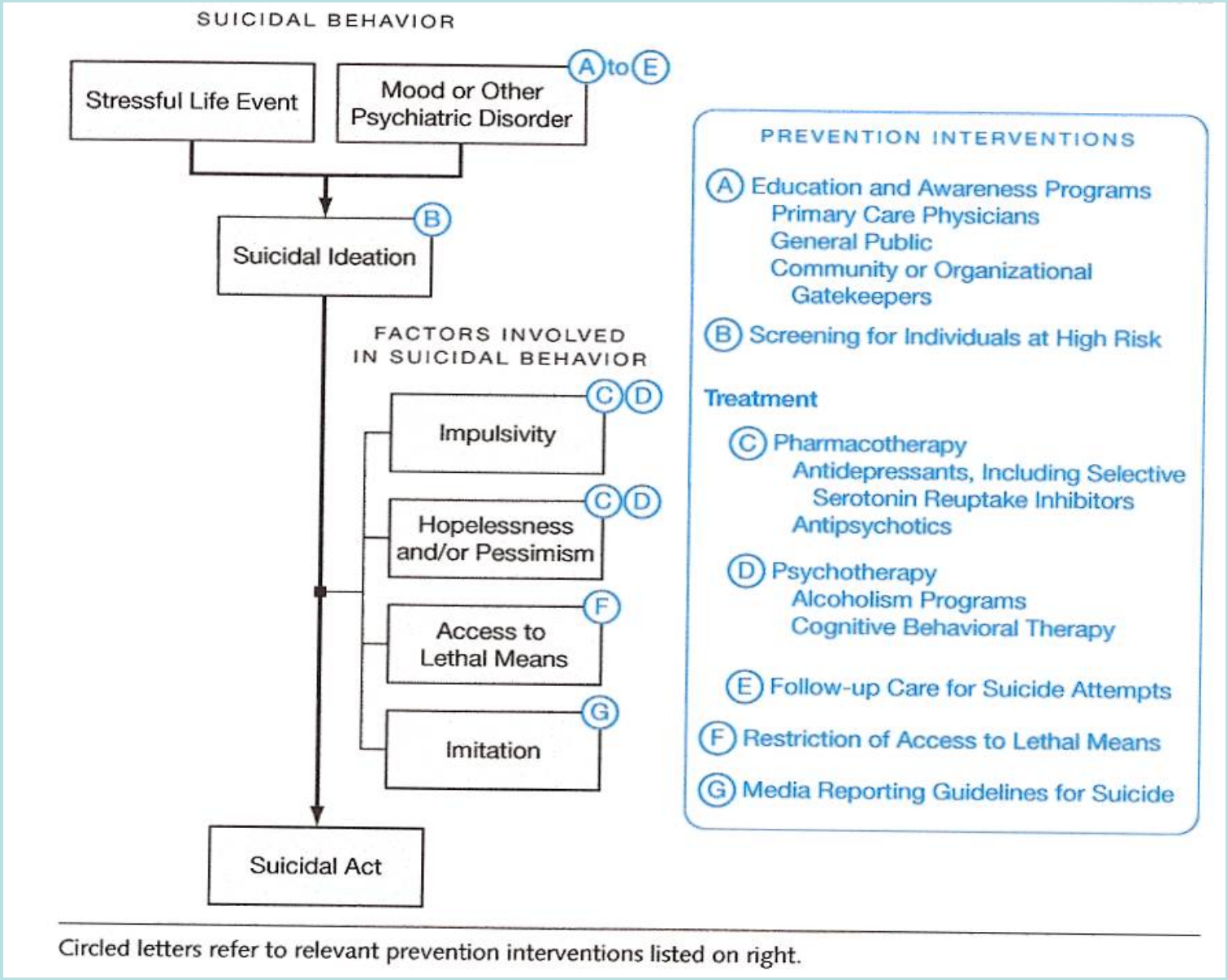


Conceptual Model of Suicidal Behaviors Among Youth

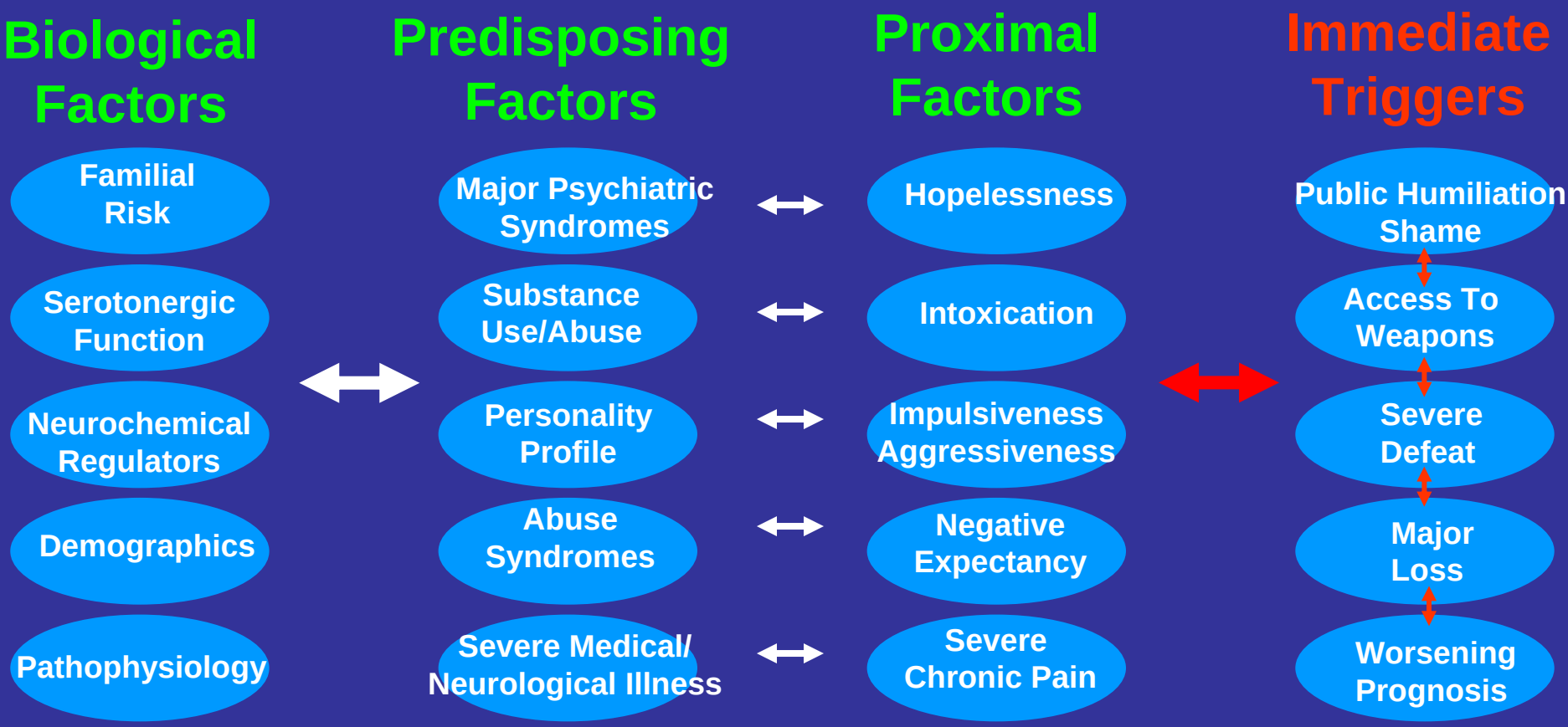


Beautrais A. Life Course Factors Associated With Suicidal Behaviors in Young People. American Behavioral Scientist. Vol 46 No. 9, May 2003. 1137-1156.

Types of Preventive Interventions



Suicide is an Outcome that Requires Several Things to go Wrong All at Once



What, then, is an appropriate program outcome?

Most valid

Least valid

1. Suicide Rates
2. Attempted Suicides
3. Suicide Ideation
4. Risk & Protective Factors
5. Attitudes
6. Knowledge
7. Satisfaction with Program

Q & A

PART II

ARE THERE EVIDENCE-BASED PRACTICES IN PREVENTING SUICIDE?

Models of EBP in Prevention

- National Registry of Effective Prevention Programs
  - *www.preventionregistry.org*
- The Community Guide
  - *www.thecommunityguide.org*
- What Works Clearinghouse
  - *www.w-w-c.org*

CSAP's Prevention Pathways:
Prevention Registry

Form Approval
OMB No. 0930-0210
Exp. Date 6/30/2006

Register Your Program

CSAP Center for Substance Abuse Prevention
Substance Abuse and Mental Health Services Administration

Center for Substance Abuse Prevention

Prevention Registry

This site offers you the opportunity to register prevention programs and share information with others in the field. Just fill in the on-line form below, providing as much detail as possible.

You may also nominate a prevention program to be considered as a **Model Program.** For these more formally evaluated programs, please submit the following types of supporting program evaluation documentation (the information you submit will be used ONLY for model program review as described above; for any other uses, CSAP will contact you to request permission):

What Works CLEARINGHOUSE

The What Works Clearinghouse was established by the U.S. Department of Education's Institute of Education Sciences to provide educators, policymakers, and the public with a central, independent, and trusted source of scientific evidence of what works in education. It is administered by the Department through a contract to a joint venture of the American Institutes for Research and the Campbell Collaboration.

What education areas should the WWC review in future years?

Click here for information on submitting studies and interventions.

What Works Clearinghouse
2277 Research Boulevard, MS 6M
Rockville, MD 20850
Email: wwcinfo@w-w-c.org
Phone: 1–866–WWC–9799
Fax: 301–519–6760

The Community Guide - Microsoft Internet Explorer provided by America Online

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Address http://www.thecommunityguide.org Go Links

GUIDE TO COMMUNITY Preventive Services

SYSTEMATIC REVIEWS AND EVIDENCE BASED RECOMMENDATIONS

Become Involved

Send comments and suggestions

- Home
- About Us
  - The Task Force
- Overview
- Topics
  - Alcohol
  - Cancer
  - Mental Health
  - Diabetes
  - Substance Abuse
  - Motor Vehicle
  - Nutrition
  - Oral Health
  - Physical Activity
  - Pregnancy
  - Tobacco
  - Sexual Behavior
  - Social Environment
  - Vaccines
  - Violence
- Library
  Articles, Slide Sets, etc.
- Methods
- Economic Findings
- Links

Site Search

Search

You can contact us at:

Community Guide Branch
Centers for Disease Control

In The Spotlight:

New Findings on Skin Cancer Prevention

New Reports on Violence Prevention

New Strategic Partnership: Cancer Control PLANET Home

The Community Guide at a Glance

Recommendations by Topic

Changing Health Risk Behaviors

- Tobacco Product Use
- Alcohol Abuse
- Physical Activity
- Sexual Behavior

Addressing the Environment

- Social Environment

Addressing Specific Health Conditions

- Vaccine Preventable Diseases
- Cancer
- Diabetes
- Mental Health
- Motor Vehicle Occupant Injury
- Oral Health
- Violence

Información en Español

Done Internet

Evidence-based Interventions

- Community education/awareness
  - Safety is an issue
- Community collaboration around suicide prevention
- Social marketing
  - Destigmatizing help-seeking for mental health problems
  - Increasing social support
  - Strengthening social networks
  - Honor and support responsible help-seeking

Guild PA, Freeman VA, Shanahan E. Promising Practices to Prevent Adolescent Suicide: What We Can Learn From New Jersey. Cecil G Sheps Center For Health Services Research. Univeristy of North Carolina at Chapel Hill. 2004.

Knox, K, et al., Risk of Suicide and related adverse outcomes after exposure to a suicide programme in the US Air Force:cohort study. British Medical Journal, December 13, 2003.

Evidence-based Interventions

- Gatekeeper training
- Peer helper programs
- Resiliency/coping/problem solving skill building programs
  - Juvenile justice
  - Homeless youth

Guild PA, Freeman VA, Shanahan E. Promising Practices to Prevent Adolescent Suicide: What We Can Learn From New Jersey. Cecil G Sheps Center
For Health Services Research. Univeristy of North Carolina at Chapel Hill. 2004.

Evidence-based Interventions

- Restricting availability of means
- Improved surveillance
- Postvention for the bereaved
- Domestic violence prevention
- Training the media

Guild PA, Freeman VA, Shanahan E. Promising Practices to Prevent Adolescent Suicide: What We Can Learn From New Jersey. Cecil G Sheps Center For Health Services Research. Univeristy of North Carolina at Chapel Hill. 2004.

Evidence-based Interventions

- Access to *effective* treatment of mental health problems
  - Training for primary care providers
  - Training for mental health providers
  - Increased availability of mental health treatment
  - Increased affordability of mental health treatment
  - Linking suicide prevention programs with treatment services
  - Appropriate follow-up after ED treatment

- Alcohol and substance abuse programs

Guild PA, Freeman VA, Shanahan E. Promising Practices to Prevent Adolescent Suicide: What We Can Learn From New Jersey. Cecil G Sheps Center for Health Services Research. Univeristy of North Carolina at Chapel Hill. 2004.

Knox, K, et al., Risk of Suicide and related adverse outcomes after exposure to a suicide programme in the US Air Force:cohort study. British Medical Journal, December 13, 2003.

Suicide Prevention Strategies

Table 3. Postintervention Decrease in Total Suicide Rates

Intervention	Suicides, % Decline in Annual Rate
Education	
Public	Not available
Primary care physician	22-73[66,47,65]
Gatekeeper	
US Air Force	40[52]
Norwegian Army	33[67]
Increasing antidepressant prescriptions*	3.2[91]
Chain of care	Not available
Restricting lethal means	
Guns	1.5-9.5[78,147]
Domestic gas	19-33[79,80]
Barbiturates	23[105]
Vehicle emissions	Not available
Analgesics	Not available
Media blackouts	Not available

*There was a 414% increase in antidepressant prescriptions 1987-1999.

Mann, et. al., *Suicide Prevention Strategies*, JAMA, 294:16 (10/26/05), 2064-2074

The SPRC/AFSP Registry of Evidence-Based Suicide Prevention Programs

Evidence-Based Practices Project

- Funded by SAMHSA through the Suicide Prevention Resource Center
- Identify and review suicide prevention programs
- Create an online registry of evidence-based suicide prevention programs
- Promote rigorous evaluation methods throughout the field

What were the results?

- Identified 54 programs
- 23 passed initial review and where submitted to expert review (3 reviewers)
- Expert review results
  - *Effective* 4
  - *Promising* 8
  - *Insufficient Current Support* 11

School-Based Programs

- **Columbia University TeenScreen**
  - (Shaffer et al., 2004; McGuire & Flynn, 2003)
- **C-Care/CAST***
  - (Thompson et al., 2001)
- **LifeLines**
  - (Kalafat & Elias, 1994)
- **Reconnecting Youth**
  - (Thompson et al., 2000)
- **Signs of Suicide**
  - (SOS; Aseltine & DeMartino, 2004)
- **Zuni Life Skills**
  - (LaFromboise & Howard-Pitney, 1995)

* Indicates an *Effective* programs; all others were *Promising*.

Psychotherapy

- **Brief At-Home Psychotherapy for Adult Self-Poisoning**
  - (Guthrie et al., 2001)

Treatment Guidelines/Case Management

- **PROSPECT***
  - (Bruce et al. 2004)

Means Restriction

- **Reduced Analgesic Packaging***
  - (Hawton et al., 2002)
- (See Also Kruesi [1999])

Systems/Public Health Approach

- **Air Force**
  - (Knox et al., 2003)

Emergency Room

- **Emergency Room Means Restriction Education for Parents***
  - (Kruesi et al.,1999)
- **Emergency Room Intervention for Teen Females**
  - (Rotheram-Borus et al., 2000)

- **Other Programs**
  - ASIST
  - Yellow Ribbon

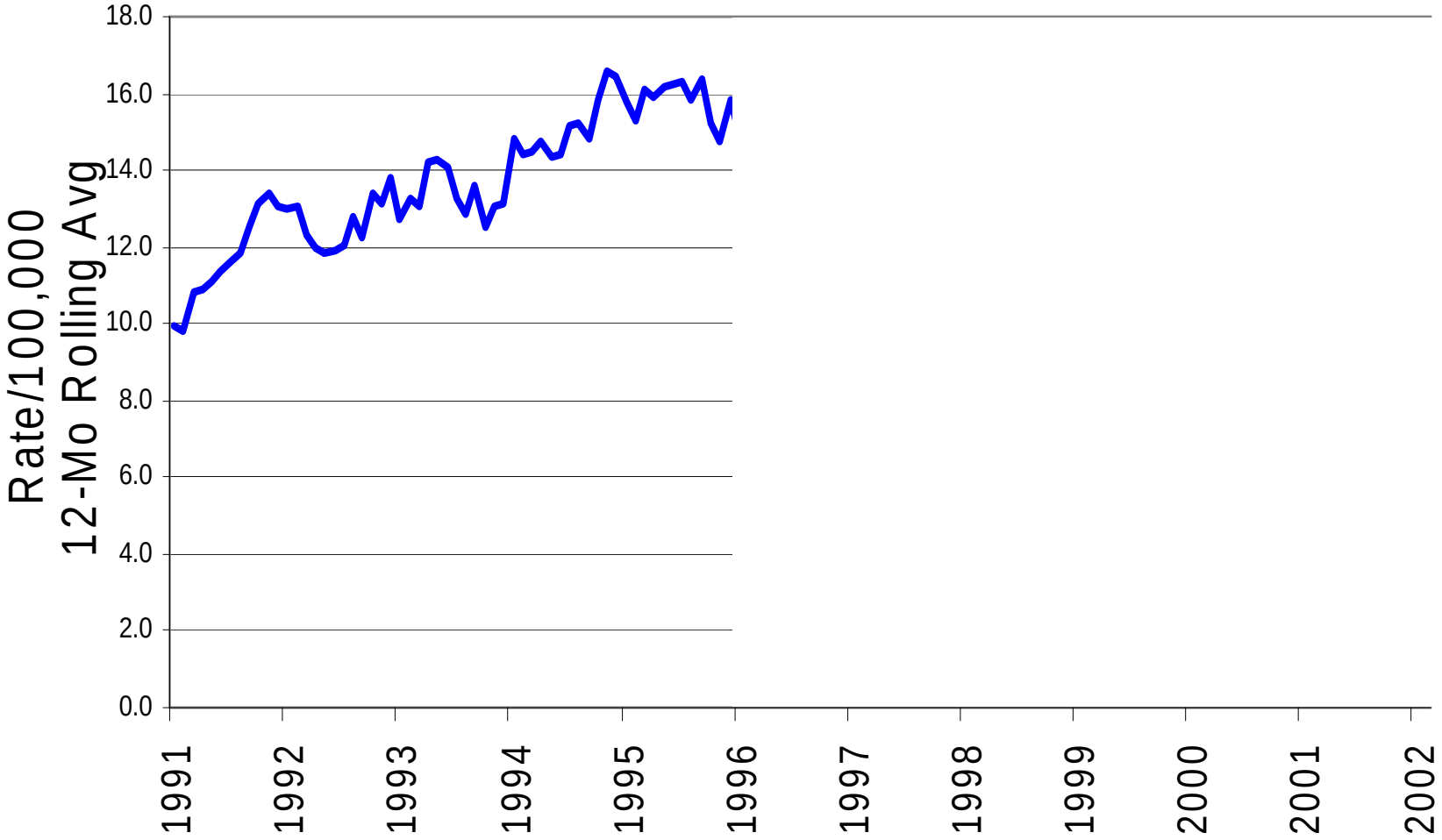
USAF Community

- 350,000 Service Members
- Educated, employed, housed, health care (including mental health care), one language
- Prescreened; low illicit drug use (~1%); discharge for mental illness
- Clearly identified community leaders
- Formal gatekeeper network

The USAF Suicide Prevention Program: A Multi-Layered Approach

- **Public health-community orientation: "The Air Force Family"**
- **Broad involvement of key leaders: Medics-Mental Health, Public Health, Personnel, Command, Law Enforcement, Legal, Family Advocacy, Child & Youth, Chaplains, CIS; Walter-Reed Army Inst. Of Research; CDC**
- **Consistent leadership involvement**
- **11 initiatives clustering in four areas**
  - **Increase awareness and knowledge**
  - **Increase early help seeking**
  - **Change social norms**
  - **Change selected policies**
- ***Common Risk Model***

Suicide Rate -- US Air Force Members 1990-2002



USAF Community Prevention Partners

- Medics-Mental Health
- Public Health
- Personnel
- Command
- Law Enforcement
- Legal
- Family Advocacy
- Child & Youth
- Chaplains
- Criminal Investigative Svc.
- CDC
- Walter-Reed Army Inst. Of Research

Assumptions / Approach

- Suicides are preventable
- Tip of the iceberg
- Not a medical problem
- No proven approaches
- Partnerships key to success
- Cultural barriers to prevention

One is too many

Address entire iceberg

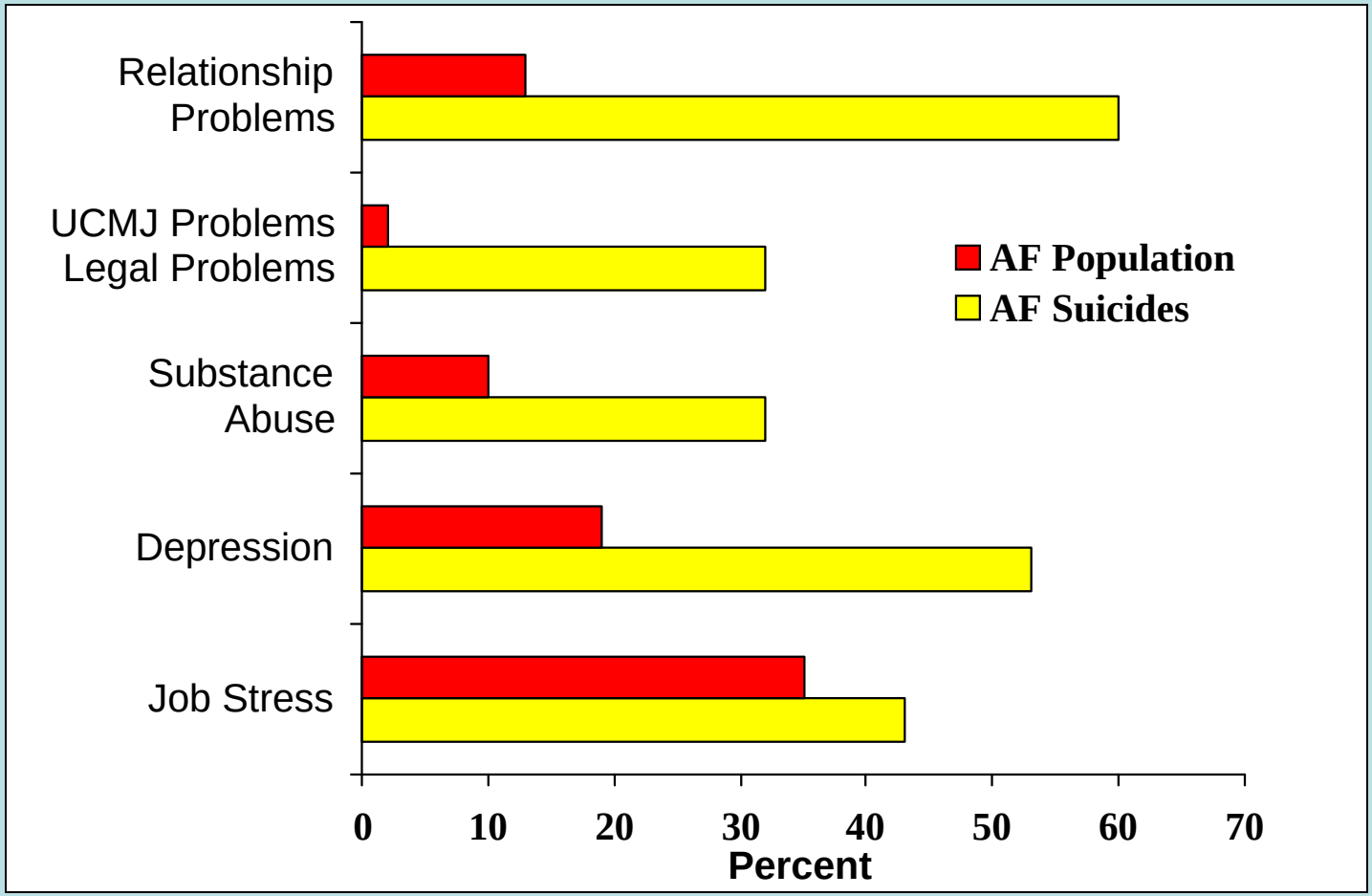
A *community* problem

Use CDC & WHO guidelines

All partners shared stake in outcome

Leverage sr. leaders for cultural change

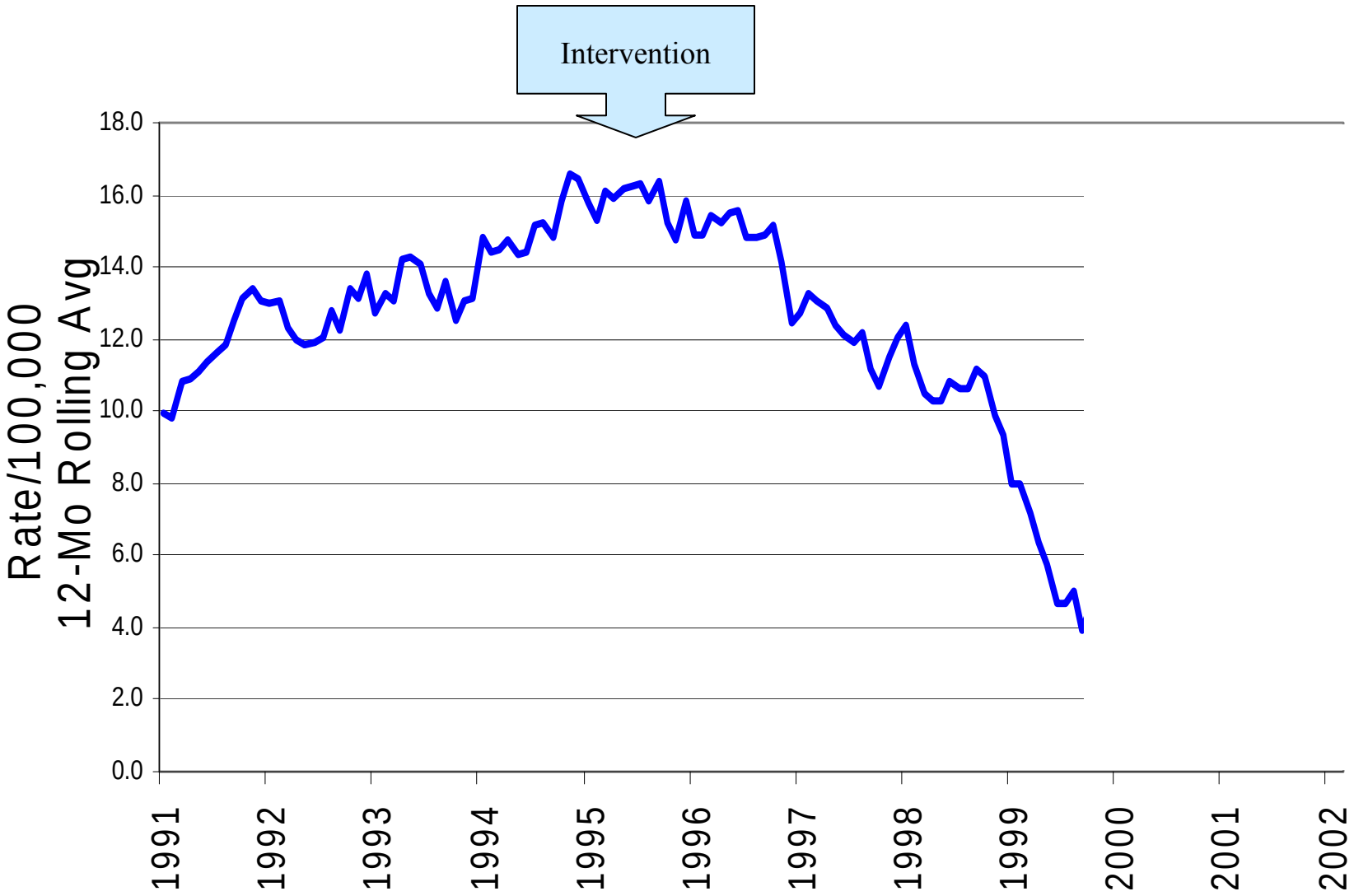
Risk Factors
AF Suicides vs AF Population*



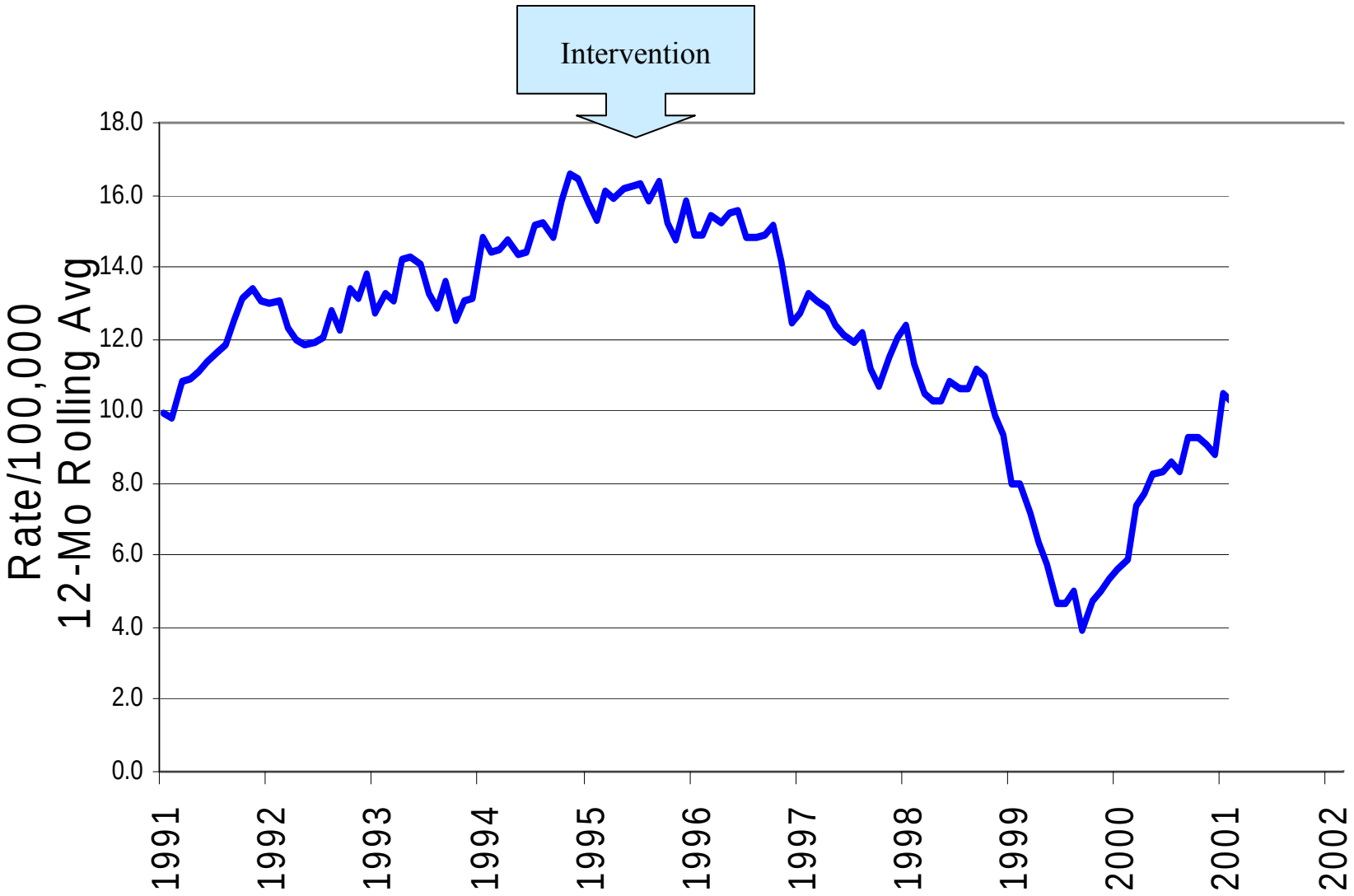
*Data from various sources, covering various timeframes between 1990 and 1995.


Surveillance of Fatal and Non-fatal Self-Injuries
Mental Health **Screening**
Messages from Senior Leaders
Community Training
Public Affairs Initiatives
Career Development Education
1° Prevention Activities for MHPs
Integrating Community Preventive Services
Gatekeeper Training
Critical Incident Stress Management
Investigative Agency Hand-off Policy
Scope of Intervention

Suicide Rate -- US Air Force Members 1990-2002



Suicide Rate -- US Air Force Members 1990-2002



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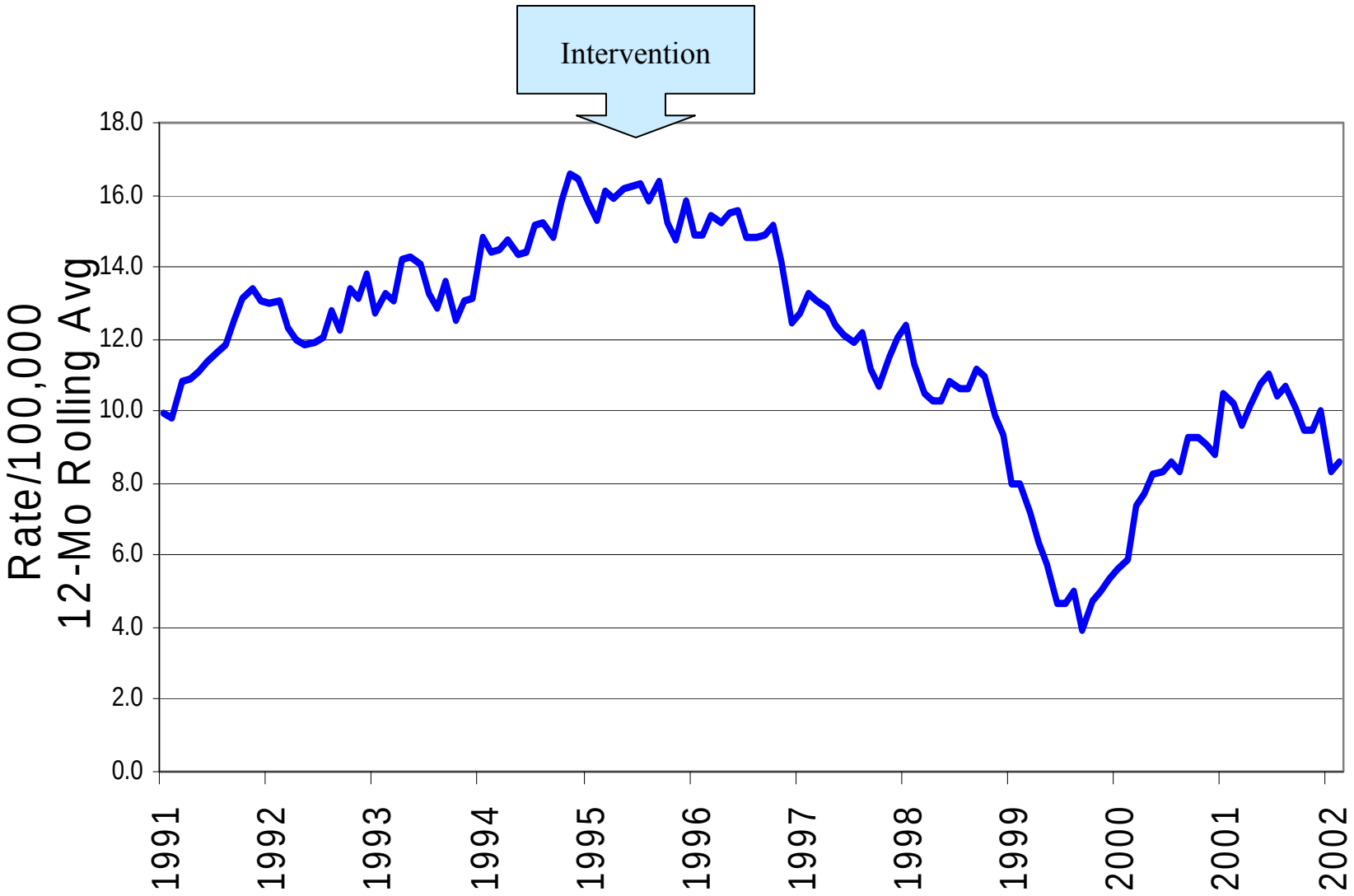
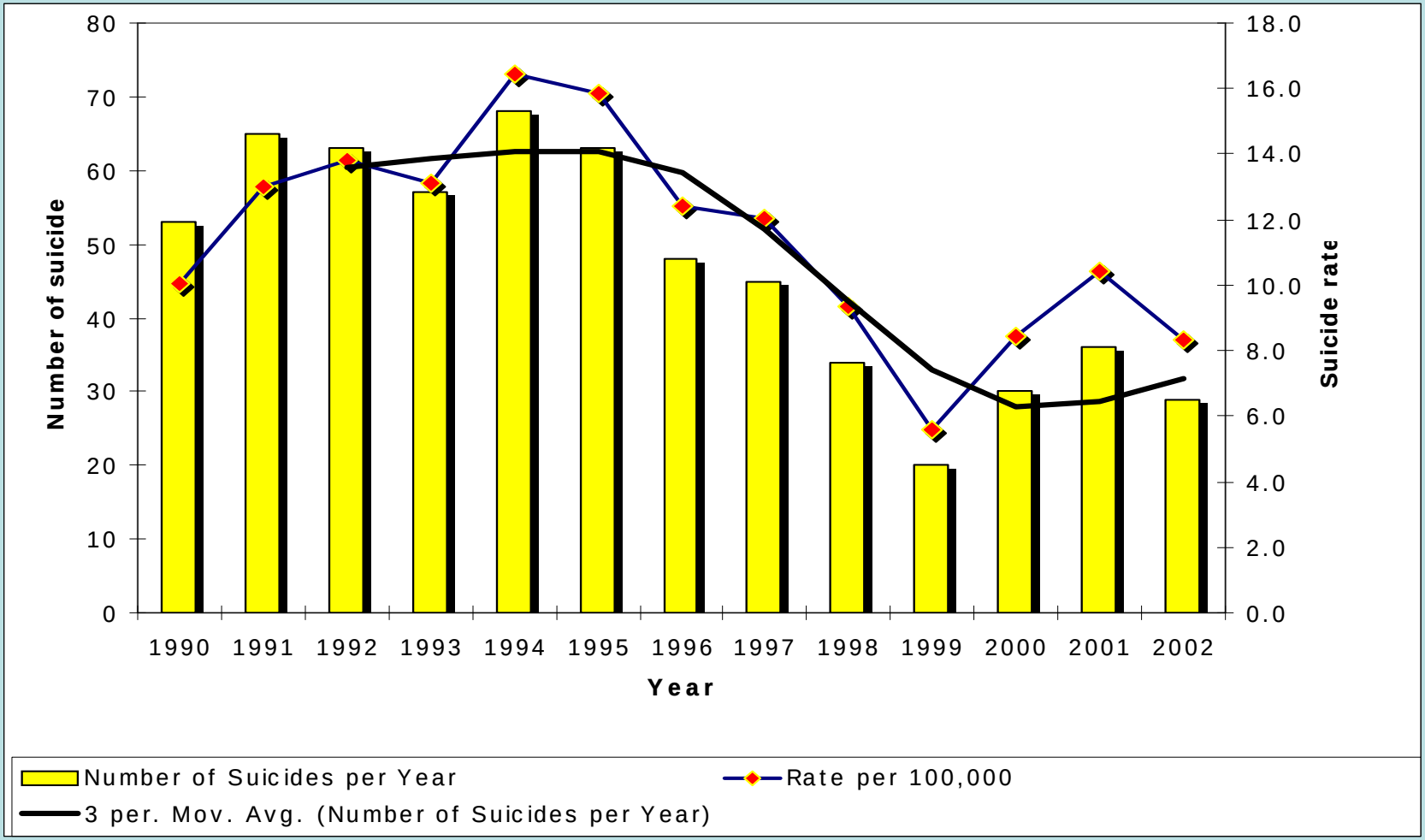


Suicide Among Airmen



Knox, K, et al., Risk of Suicide and related adverse outcomes after exposure to a suicide programme in the US Air Force:cohort study. British Medical Journal, December 13, 2003.

"Addressing risk factors across the various levels of the ecological model may contribute to decreases in more than one type of violence."

***Violence – A global public health problem*, World Health Organization, 2002, p. 15.**

Results

Comparison of the effects of risk for suicide and related adverse outcomes in the USAF population prior to implementation of the program (1990-1996) and after implementation (1996-2002).

Outcome	Relative Risk (RR) and 95% CI	Risk Reduction (1-RR)	Excess Risk (RR-1)
Suicide	**.67 [.5702, .8017]**	**↓ 33%**	**--**
Homicide	**.48 [.3260, .7357]**	**↓ 51%**	
Accidental Death	**.82 [.7328, .9311]**	**↓ 18%**	**--**
Severe Family Violence	**.46 [.4335, .5090]**	**↓ 54%**	**--**
Moderate Family Violence	**.70 [.6900, .7272]**	**↓ 30%**	**--**
Mild Family Violence	**1.18 [1.1636, 1.2040]**	**--**	**↑ 18%**

Knox, K, et al., Risk of Suicide and related adverse outcomes after exposure to a suicide programme in the US Air Force:cohort study. British Medical Journal, December 13, 2003.

Summary

- Suicide and its antecedent risk factors are leading contributors to HR costs
  - Affect large proportion of workforce
- Comprehensive suicide prevention programs can:
  - Substantially decrease leading causes of death and disability
  - Improve employee health
  - Improve productivity
- Suicide prevention is the *right thing* to do

Programs for the Prevention of Suicide Among Adolescents and Young Adults

- School gatekeeper training
- Community gatekeeper training
- General suicide education
- Screening programs
- Peer support programs

CDC. Youth Suicide Prevention Programs: A Resource Guide. 1992.

Programs for the Prevention of Suicide Among Adolescents and Young Adults (continued)

- Crisis Centers and hotlines
- Restriction of access to lethal means
- Intervention after a suicide

CDC. Youth Suicide Prevention Programs: A Resource Guide. 1992.

Common Youth Suicide Prevention Strategies Utilized in Prevention of Other Forms of Violence

	Youth Violence	Sexual Assault	Intimate Partner	Child Abuse
Gatekeeper Training	✔		✔	✔
Education	✔	✔		
Screening		✔	✔	✔
Peer support	✔	✔	✔	
Crisis centers		✔	✔	
Restrict lethal means	✔		✔	
Post-event intervention	✔	✔	✔	✔

KEY COMPONENTS:
Comprehensive Suicide Prevention Program

- SUICIDE PREVENTION COORDINATOR
- FUNDING
- ADVOCACY
- NEEDS ASSESSMENT
- DATA IMPROVEMENT
- INTERVENTION PLAN
- SUPPORT AND GUIDANCE FOR LOCAL PROGRAMS
- EVALUATION
- COLLABORATION

PARTNERS

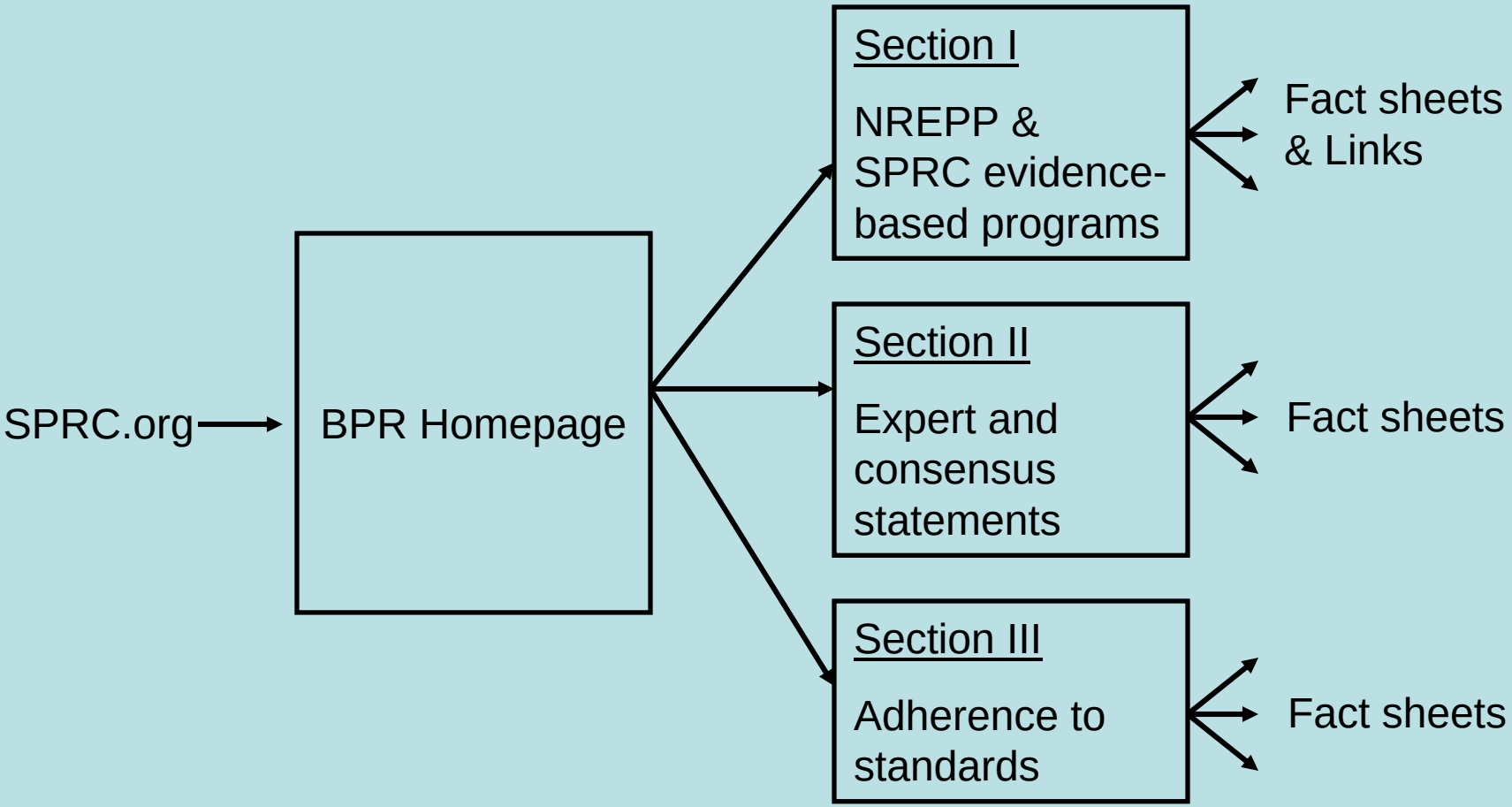
- HEALTH/PUBLIC HEALTH
- MENTAL HEALTH
- LAW ENFORCEMENT
- MEDICAL EXAMINER
- FAMILY SURVIVORS
- EDUCATION
- SUBSTANCE ABUSE
- JUVENILE JUSTICE
- FAITH-BASED ORGANIZATIONS

The SPRC/AFSP Best Practices Registry

What is the purpose of the Best Practices Registry (BPR)?

The purpose of the BPR is to identify, review, and disseminate information about best practices that address specific objectives of the *National Strategy for Suicide Prevention*.

How is the BPR organized?



Conclusions

- There are a limited, but growing, number of evidence-based programs in suicide prevention
- However, suicide prevention requires multiple contributions, on multiple levels, through multiple initiatives
- The BPR will support a wide-range of prevention activities that address goals of the NSSP

CHOOSING STRATEGIES and MAKING a PLAN

Strategic Planning/ Evaluation Process

Problem Analysis

↓

Long-range goals

↓

Consult the literature:
Science / Theory / Assumptions

↓

Strategies → Activities & Evaluation plan

↓

Implement program activities

↓

Evaluate whether goals were achieved

Assess readiness for planning

Assess readiness for implementation and evaluation

1st three steps are a non-linear process

Strategies

- Definition
  - A prevention approach designed to make changes in *individuals* or in the *environment*

Strategies Can Involve:

- Seeking to change individuals directly.
- Seeking to change individuals by altering their environments.

Interventions are most effective when they target multiple levels of influence.

Strategies vs. Activities

- **Strategy** is focused on *how you'll affect the problem of interest* (and *why* you chose that approach)

- Program **activities** are details about *how you'll carry out the strategy*

Challenge:

Balance between strategies & tactics

Strategies are not the same as tactics:

- *Strategies* will create changes in people or in the environment;
- *Tactics* are used in service of achieving strategies, but will not in themselves lead to desired outcomes;

Considering Strategies

1. What has been done in the past to address problems, and to what effect?
   - Include programs, policies, services
   - What *specific* factors were targeted?
   - Did the interventions work?
     - How well? Time frame? For everyone?
     - Quality of study, measurement
     - Did actual behavior change occur?

Goal: Examine what's been tried

Data: Evaluation studies

Considering Strategies

2. What other interventions might be tried?
   - Based on:
     - risk and protective factors
     - interventions for other behaviors
     - theory
     - logical assumptions

Goals: Improve upon past interventions; address problems unique to your setting

Data: Theory, all studies

What strategies are available?

- The strategies must reflect the problem analysis and goals

- Be specific enough to clarify what you're really trying to change
  - increase knowledge (about...) by... (strategy)
  - change (what) policy through…. (strategy)
  - change (what) norm by... (strategy)

Strategies vs. Activities: Example

- ***Problem:*** Students who are depressed are not in treatment.
- ***General Goal:*** Get depressed students to treatment.
- ***General Strategy:*** Increase identification of students who are depressed.
- ***Activities:*** Collect health info from incoming students & invite them to counseling; gatekeeper training; online screening.

What if science is lacking?

1. Base interventions on Theory

Examples:

- Social learning theory
- Health Belief model
- Diffusion of innovations

What if science is lacking?

2. Use Logical Assumptions

Example: Creation of interventions to increase help-seeking

- Research found that perceptions about mental illness and the "mentally ill" affect attitudes toward mental health treatment
- Logic suggests that interventions to change perceptions about mental illness/mentally ill might increase help-seeking
- Activity: Media campaign would be an efficient method to change attitudes towards mental illness

"The impulse to invest only in proven approaches should not be an obstacle to supporting promising ones. Promising approaches are those that have been evaluated but require more testing in a range of settings and with different populations."

"Violence is far too pressing a problem to delay public health action while waiting to gain perfect knowledge."

Violence – A global public health problem, **World Health Organization, 2002, p. 16.**

Summarizing Problem Analysis, Goals, Strategy

- Nature and extent of problem
- List contributing factors
- Focus in on factors to target
  - *describe* in detail
  - document *why* you'll target them
- Describe strategy
  - describe *how* it will impact factors identified above
  - *evidence* that this strategy will have an impact on behavior/outcomes

Rest of Planning Process

- Once you have strategy
  - Refine target audiences
  - Choose program activities
- Begin to assess readiness to implement this strategy

Summary

- Problems must be addressed by *entire community*
- Problems must be addressed *at multiple levels*
- Think/plan *strategically*
  - Understand problems
  - Set goals
  - Choose evidence-, theory-, or logic-based strategies

Indicators **of Suicide Prevention Program Implementation**

- ***Process indicators** – evidence of participation in programs and activities – the type of measure most often used but **least indicative of meaningful effect***
- ***Impact indicators** – evidence of change in participants or programs, in attitudes and actions, or program activities – less often used*
- ***Outcome indicators** – evidence of change in ultimate (end point) targets → i.e., reduction of mortality and morbidity associated with suicide and attempted suicide (**note that changes in suicidal ideation and depression are intermediate in the path to suicide, not specific indicators of suicide prevention**) – **little used!***

Suicide Prevention and Evaluation – Universal

- **Problem definition and awareness**
  - **Surveillance (case definition) – ethical challenges – *OUTCOME INDICATORS: fundamental ⇓⇓ of attempts and deaths***
  - **Media (Vienna; Hong Kong) – *surveillance and impact assessment of changes in social attitudes***
- **Restriction of lethal means**
  - **Coal gas & paracetamol package size (UK) – *surveillance***
- **Education and training - examples**
  - **Clinicians (primary care providers, mental health professionals, and others)**
  - **Public employees (police, judges, probation, prison personnel, social service case workers)**
  - ***Evaluation: Outcome indicators of reduced attempts and deaths, as well as process and impact indicators***

ONE EXAMPLE

GATEKEEPER TRAINING

Contact With Primary Care Provider Before Suicidal Death

	Overall	<35 y/o	>55 y/o
Within 1 Year	77% (57-90) F: 100% M: 78% (69-87)	62% (42-82)	77% (58-90)
Within 1 Month	45% (20-76)	23% (10-36)	58% (43-70)

Luoma, Martin, Pearson AJP 159:909-916, 2002

Contact With Mental Health Providers Before Suicidal Death

	Overall	<35 y/o	>55 y/o
Lifetime	53% (39-63) F: 78% (72-89) M: 47% (41-58)	38% (15-65)	19.5% (12-26)
Within 1 Year	32% (16-46) F: 58% (48-68) M: 35% (31-40)	24% (23-25)	8.5% (6-11)
Within 1 Month	19% (7-28) F: 36% (32-39) M: 18% (16-22)	15% (7-32)	11% (8-14)

Luoma, Martin, Pearson AJP 159:909-916, 2002

Suicidal Deaths After Contact With Health Care

Location	Within 1 Year	Within 1 Day of Discharge
Psychiatric Inpatient Care	41%	9%
Community-Based Mental Health Care	11%	4%
Primary Care Provider	83%	20%

Pirkis & Burgess BJP 173:462-474, 1998

Suicide After Discharge From Psychiatric Inpatient Services

Time	% of Suicides (N=280)	SMR
Within 28 Days	30.3%	F: 178 M: 113
Within 1 Year (days 28-365)	1.3%	F: 44 M:24

N = 21,921 discharged pts (1997-1999)

Increased rates for M (4.6x) and F (4.0x) w/in 28 days of d/c than for rest of year

Ho J. Clin. Psyc. 64:702-707, 2003

Trends in Emergency Department Treatment of Mental Disorders

- 100 million total ED visits in 1992-2001
- 20% increase in number of visits over prior decade, 40% increase for psych
- 15% decrease in number of ED's over prior decade
- 6.3% of presentations were for MH
- 7% of these were for suicide attempts = 441K visits

Larkin GL et al. Trends in U.S. Emergency Department visits for mental health conditions, 1992-2001. Psychiatric Services. 56(6):June 2005.

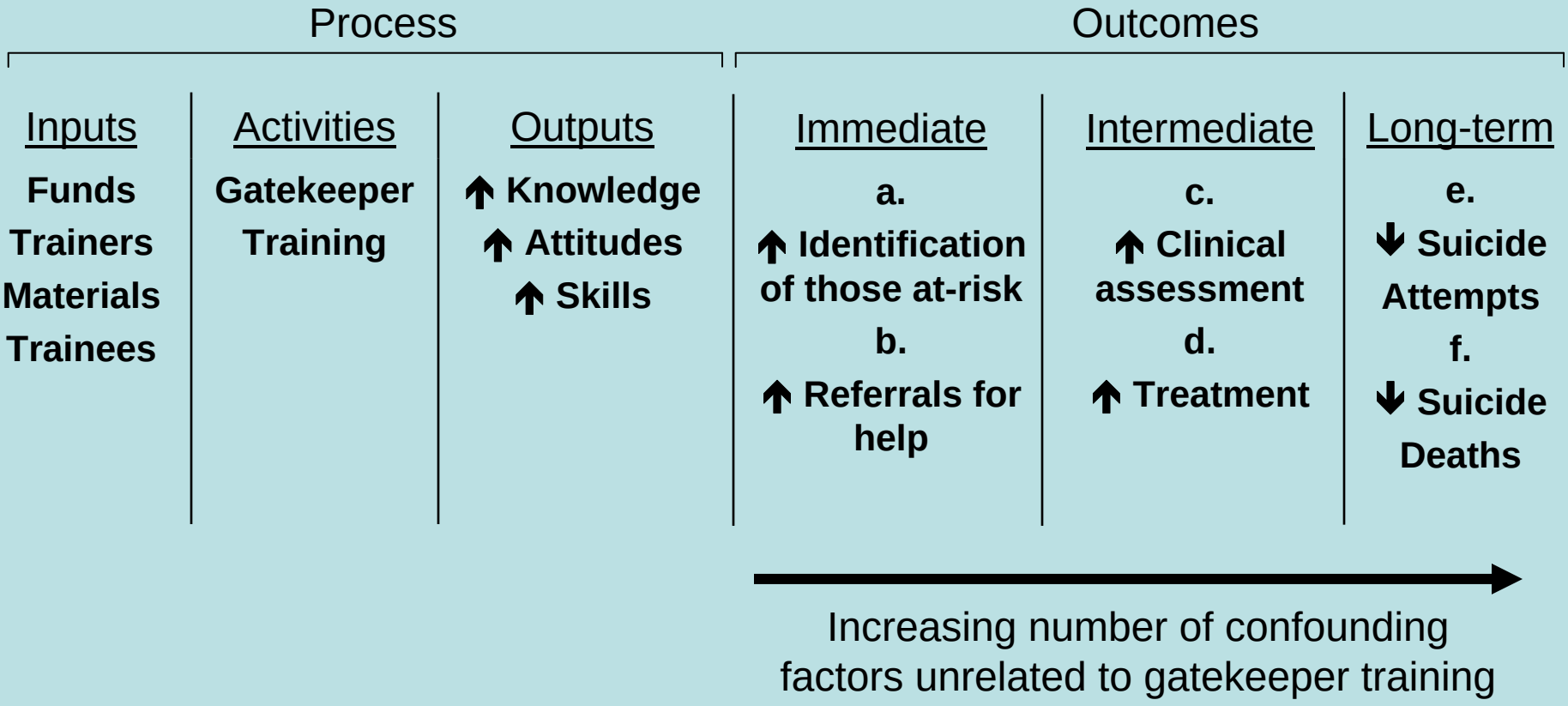
Trends in Emergency Department Treatment of Mental Disorders

- Suicidal ideation common in ED patients who present for medical disorders
- Study of 1590 ED patients showed 11.6% with SI, 2% (n=31) with definite plans
- 4 of those 31 attempted suicide within 45 days of ED presentation

Claassen CA, Larkin GL. Occult suicidality in an emergency department Population. British J Psychiatry. V186, 352-353, 2005.

How do we measure program success?

Generic Gatekeeper Training Logic Model



The Gotland Study, 1983-84

- Education program (2 sessions) for all 18 PCPs re: depression recognition and management

- Demonstrated temporal effects on…
  - Hospitalization (↓ inpatient days for depression)
  - Med prescriptions (↑ antidepressants, ↓ sed/hypnotics)
  - Disability/sick-leave (↓ days)
  - Suicide rate (↓)

- But..
  - Effect time limited
  - Suicide ↓ only among younger women

Rutz et al., Acta Psy Scand 80:151-154, 1989
85:83-88, 1992
85:457-464, 1992

An Opportunity

- Community leaders, gatekeepers, etc., can learn to identify, assess and refer individuals at risk
- Clinical care professionals can be taught how to do patient education, assess for suicide risk, do crisis intervention, and refer
- Mental health professionals can be taught how to intervene and manage suicidal patients

Thank You……

for the Great Work That You are Already Doing to Save Lives – Day In & Day Out.